THE BRICKBUILDER.

VOL. 13 SEPTEMBER 1904 NO. 9

CONTENTS — PLATES

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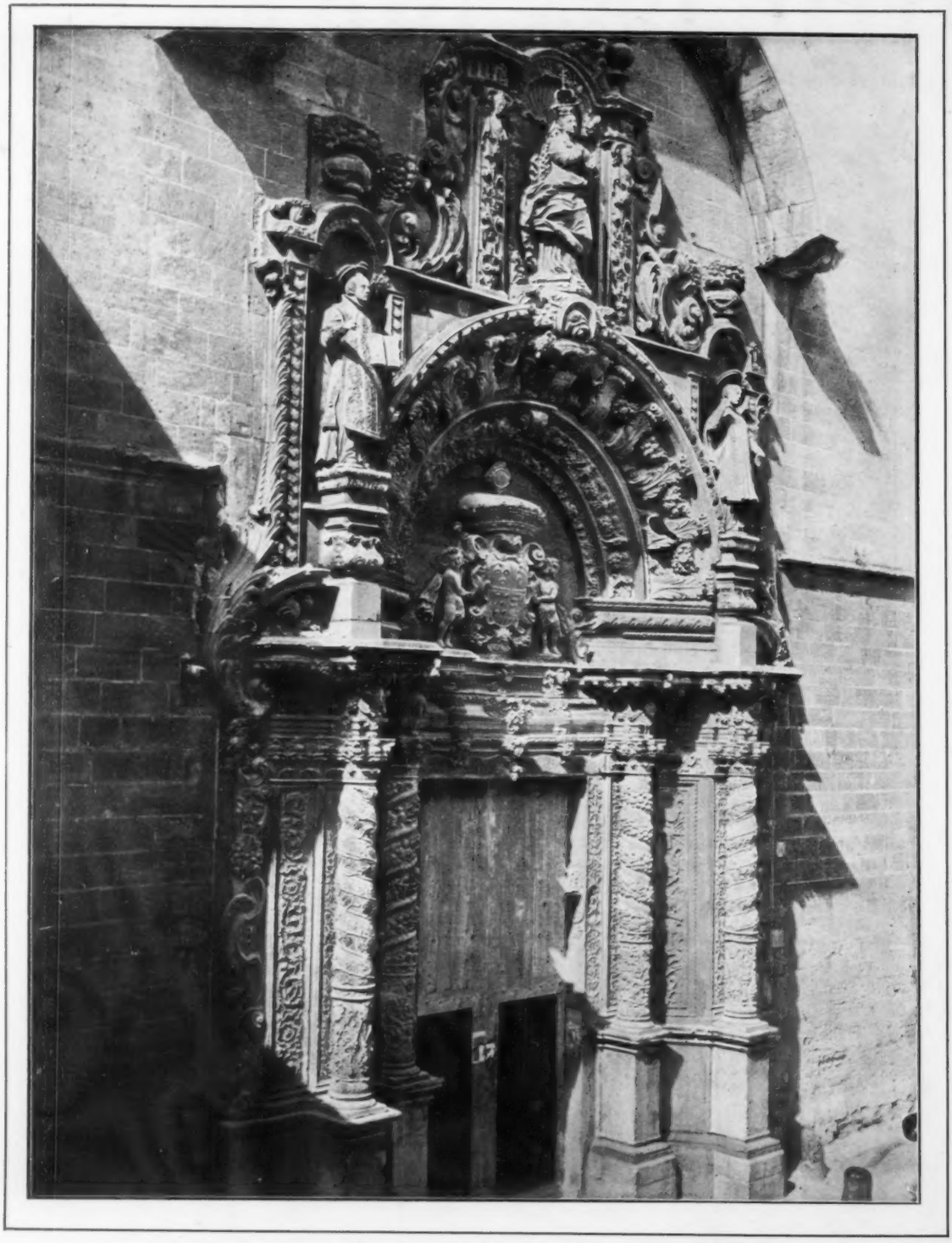
CONTENTS — LETTER PRESS

PAGE

DOORWAY, CATHEDRAL OF PALMA, ISLAND OF MAJORCA ..... Frontispiece
EDITORIALS 177
BRICKWORK ON THE PACIFIC SLOPE. I ..... *Charles Peter Weeks* 178
THE NEW CATHEDRAL AT WESTMINSTER 181
SOME MINOR ENGLISH DOMESTIC BRICKWORK. I ..... *Frank Chouteau Brown* 186
NOTABLE FIREPROOF BUILDINGS NOW BEING ERECTED IN CHICAGO 191
EDITORIAL COMMENT AND SELECTED MISCELLANY 193



DOORWAY, CATHEDRAL OF PALMA, ISLAND OF MAJORCA.

THE BRICKBUILDER

VOL. 13 No. 9 — DEVOTED · TO · THE · INTERESTS · OF ARCHITECTVRE · IN · MATERIALS · OF · CLAY — SEPTEMBER 1904

THE BRICKBUILDER.

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THE OAKLAND SCHOOLHOUSE COMPETITION.

IN our last number we made mention of the series of resolutions which had been passed by the San Francisco Chapter of the American Institute of Architects in regard to the terms of a competition proposed by the Oakland Board of Education for the selection of plans for some new school buildings to be erected in Oakland. The resolutions of the Chapter presented such cogent reasons why the terms proposed by the Board were not equitable, that it would seem as if for their own sakes the authorities would have been glad to listen to what the Chapter proposed and to avail themselves of the proffered aid of advice free of compensation. Apparently, however, the Oakland Board of Education considered it knew more about architecture than the experts, and has declined to pay the slightest heed to the protest, a course of action which has called forth a second series of resolutions adopted by the Chapter, the kernel of the whole being embodied in the following:

"WHEREAS, The said Notice to Architects offers little of promise to the profession and cannot justify architects in taking part in a competition so conducted, in that it is calculated for and permits of favoritism and injustice; and,

"WHEREAS, There is a recognized method for conducting competitions for the selection of an architect, which, if carried out in good faith, guarantees satisfactory results; therefore, be it

"*Resolved*, That, as in the opinion of this Chapter an injustice is done the entire architectural profession, we advise all architects not to enter the said competition for new schoolhouses for the City of Oakland; and be it therefore further

"*Resolved*, That participation in the said competition under the present program and Notice to Architects will be regarded by the San Francisco Chapter of the American Institute of Architects as unprofessional conduct; and be it further

"*Resolved*, That a copy of these resolutions be forwarded to the Board of Education of the City of Oakland, to every certified architect in the state, and to each Chapter in the United States."

There are times in some controversies when the only course to take is to unflinchingly declare one's convictions, nail one's colors to the mast and if necessary to go down fighting. Apparently the San Francisco Chapter has felt this was one such occasion. We very much doubt whether their resolutions will have the slightest effect upon the immediate action of the Board of Education, and we further imagine that the only direct result of this protest will be that the award of the buildings in the hands of the Board will be made to some architect not a member of the Chapter. If the Board is purely political in its nature, in one sense the Chapter has been playing into its hands, as by abstaining from competing the number of possible architects from which to choose is of course greatly reduced. If, on the other hand, the Board is well meaning, but self-sufficient, these resolutions will undoubtedly embitter rather than ameliorate the situation. The ultimate result, however, of just such vigorous action as the Chapter has taken will be for good. Such action as is indicated by these resolutions demands a kind of courage which most architects are willing their competitors should display, but from which they are very careful to abstain; and it shows either a good deal of pluck or some other pertinacious qualities which we will not characterize, to fling such resolutions in the teeth of a school board. Our sympathies are entirely with the Chapter. They will not win this fight, but their action will make another fight easier, and if architects more generally would stand by the principles herein enunciated they would go a long ways towards drawing the attention of laymen favorably to the profession, and would be contributing very powerfully towards the education of the people up to an idea of what constitutes architectural ethics. Whether ignorantly or otherwise, the terms of competition proposed by the Board were unfair and unwise, and the San Francisco Chapter is certainly to be congratulated upon the stand it has taken. We would wish that the chapters of the Institute in other cities could at times be equally vigilant and outspoken in regard to improperly planned and conducted competitions for public buildings.

Brickwork on the Pacific Slope. I.

BY CHARLES PETER WEEKS.

SAN FRANCISCO.

IT is generally considered that to have the design of architectural structures regulated by natural conditions is a good thing, but this is not true in the case of San Francisco.

In the early history of this city an earthquake scare started the inhabitants to building wooden structures. The early pioneer, fearing the crash of masonry about his head, caused by the oscillations of the earth, spent his fortune in highly ornate wooden mansions, which to-day give that flimsy, cheap character to the architecture of San Francisco. The visitor expecting to find an echo of the early Missions is vastly disappointed.

Nob Hill is covered with these cheap looking imitations of European castles, and it is only within the last few years that the sheep, following a frightened leader, have stopped and taken a stand.

HOUSE BY COXHEAD & COXHEAD, ARCHITECTS.

The entire character, architecturally speaking, of this city is changing very rapidly. Substantial structures are taking place of the flimsy dwellings, and there is being as great a rush to follow the leader in brick and stone as there was heretofore to follow the leader in wood.

A. Page Brown was one of the first men to build real architecture in San Francisco. He founded an office from which has sprung a number of architects who have beautified the city; among them, Schweinfurth, Maybeck, Mattecian, Knowles and others. This force has been added to by offsprings from the large offices in the East and by students in both the American and European schools, until San Francisco has as representative a lot of men as any city in the Union.

In this series of articles I shall not attempt to illustrate the larger hotels and office buildings, but confine myself to dwellings, clubs, churches and other small buildings of this character.

SWEDENBORGIAN CHURCH, A. PAGE BROWN, ARCHITECT.

One of A. Page Brown's most characteristic bits of work is the charming Swedenborgian Church, shown in the second illustration. Mr. Woster, pastor of the church, was of great assistance to Mr. Brown in this most tasteful composition.

From the street one sees a low portico, composed of three arches in brick and rough plaster, and a corner bell tower in brick and marble against the main gable end of the church. The central arch of this portico is closed with a wrought-iron gate. The picture is one that recalls Italy, and is very appropriate for San Francisco with its hills and bays and climate so similar to that country.

Entering through this iron gate and turning to the left, the visitor comes upon an inviting garden surrounded on two sides by plant-grown walls, and on the others by the church proper and a cloister in the same smooth clinker brick as the church itself.

The roof of the church and cloister is of old Spanish tile. The entrance to the church and rectory is through this cloister.

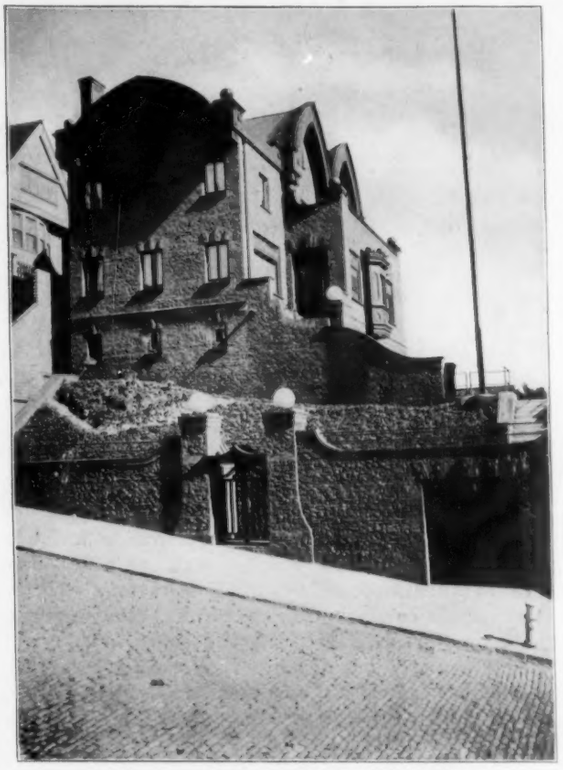
The interior of the church is equally as inviting, picturesque and beautiful as the exterior.

The residence portion of San Francisco is almost exclusively on hillsides, commanding either a view of the bay with the beautiful Marin County hills beyond, or of the city itself in the opposite direction. This has affected the design of nearly all of the residences, and has added greatly to the difficulty of the successful solution of the residence problem. This accounts to a great extent for the scarcity of buildings in the Mission style of architecture.

HOUSE BY ALBERT SUTTON, ARCHITECT.

The long, low arcade requires a broad expanse of ground, which San Francisco is unable to furnish, and the architects have, to a great extent, drifted into the rambling, English style of architecture, with its greater apparent ability to cling to the hillside.

Owing to the fact that the hillside facing the bay slopes to the north instead of to the south, domestic gardening is hampered or eliminated entirely from most of the residences. The clinging vine has been called into play to relieve the coldness and barrenness of this lack of garden.



HOUSE BY EDWARD L. HOLMES, ARCHITECT.

A residence on the corner of Jackson and Pierce streets is a good example of the characteristic San Francisco house I describe. Coxhead & Coxhead are the architects. The house is built of selected common brick, laid up in white mortar. The entrance and keystones are of white sandstone; the roof, of wooden shingles. The iron lantern and window grill and anchor heads give a touch of playfulness, and relieve the otherwise severe character of the composition.

HOUSE BY BLISS & FAVILLE, ARCHITECTS.

Another residence by these same architects is on the corner of Pacific Avenue and Devisadero Street. The brickwork is smooth clinker with common brick quoins. The cornice, pediments over the windows and door, and window sills are of

HOUSE ON SPOONER AVENUE, COXHEAD & COXHEAD, ARCHITECTS.

brown sandstone; the roof, of slate, pierced with wooden dormer windows. The severity of the attic wall is relieved at the entrance and bay windows by stone balusters. The entrance columns are the only unfortunate part of the design; the delicate shafts and heavy brick quoins being so utterly out of scale with each other. The building is nicely placed on a turf terrace, retained by a smooth clinker brick wall. The steps leading to the house are also of brick.

Another house inspired by the study of English design and hillside limitations is the residence of Mr. Albert Sutton, on Vallejo and Devisadero streets. It is generally conceded that an architect cannot successfully design his own house, but this is undoubtedly not true in the present case.

Resting on a broad brick retaining wall, this house rises from among flower beds at either side of the walk, well composed and of good outline.

Mr. Sutton has used a red stock brick laid in red mortar. The cornice, bay windows and balusters are of wood, painted white. The roof is of wooden shingles. The down spouts are of copper with ornamental heads and straps. The retaining wall is pierced with an entrance of brick steps leading to a brick floored porch, the roof of which serves as a balcony. From it, and large bay windows in the living room and dining room, a panoramic view of the Golden Gate, Mount Tamalpais and the entire bay is had.

The residence of Mr. W. F. Boardman on Russian Hill, Edward L. Holmes, architect, is quaintly original in design. The brick used are clinkers; the mortar, red; the trim, of redwood darkened with a stain. Wooden shingles cover the roof. The unusual gables are pleasing. The house rises strong and natural from the hillside.

Another residence on Green Street in the Russian Hill district is that of Mr. O. D. Baldwin. The architect, E. J. Vogel, has used a stock brick. The gable ends are in slate unfortunately, which detracts materially from the otherwise good design.

The residence on the corner of Baker Street and Broadway, Bliss & Faville, architects, is a remarkably successful recall of Colonial design. A nice, rough textured brick has been used with white mortar joints. The window heads are of white marble, as are the steps and water table. The portico and cornice are of wood painted white. The roof and dormers are also of wood. The vigorous character of this design, with its substantial gable terminating in two chimneys, makes it an appropriate structure for this rugged country.

HEAT AND REFRIGERATION FROM A CENTRAL PLANT.

"ONE of the new enterprises that will be carried out in Baltimore's burnt district," says a writer in the New York *Evening Post*, "is the establishment of a heating and refrigerating plant for the supply of these two commodities throughout the section. I believe that ninety per cent of the new buildings along its pipe line will take their heat from this concern instead of producing it through individual boilers, This is popularly known as 'The Hot-Air Company.' It proposes to put in meters which will register the amount of condensation, so that the consumer will pay with considerable exactness for the amount of steam that he uses, and will thus be under the same motives to be reasonable and economical as if he were furnishing the coal himself. The incidental advantages of such a system are very great. The danger from fire will be much lessened, and the insurance companies will doubtless give lower rates on the buildings which are so equipped. The city will invite bids from this company for heating the City Hall and Courthouse, and these will be compared with the approximate cost under the old system. Professor Woodbridge, it is reported, is already making a study of Washington public buildings with a view to a similar undertaking. I look to see considerable development of this idea."

HOUSE BY E. J. VOGEL, ARCHITECT.

The New Cathedral at Westminster.

FROM many parts of the western side of London a great brick tower can be seen stretching high above the surrounding buildings, yet not one person in a thousand knows what it is. The architect with a tutored eye will recognize at once that it is no everyday design, though the average person, accustomed to associate all manner of pinnacles and crockets with a church tower, fails to realize this as the campanile of a Roman Catholic cathedral. If, however, the passer-by will turn from the endless traffic that throngs Victoria Street he will suddenly come upon this high tower and the huge fabric that lies below it. The first view amazes one, but the thought instantly occurs how unworthy the site is for so great a building, hemmed in, as one sees, by tall blocks of flats and residences which preclude any really complete view of it. To secure a noble site, however, is practically an impossibility in London to-day, and the history of this cathedral shows what difficulties are experienced in attempting to find one. So far back as 1865 the idea of building the cathedral originated with Cardinal Wiseman, and after his death the project took shape under Cardinal Manning, being brought to completion by his successor, Cardinal Vaughan. Many sites were under consideration, but eventually, in 1884, the present one was acquired for $275,000. As a rule it is not of particular interest to know what formerly occupied an area which has been cleared for a new building; but this case is an exception, for on a portion of it was the Middlesex County Prison, and the bed of concrete (nine feet thick) on which the prison stood became a ruling factor in determining the foundations for the great cathedral that was to rise over it. This bed extends diagonally across the building, as indicated by the dotted line on the plan, and the new foundations have been incorporated with it. Their extent can be gauged from the fact that six thousand tons of fresh concrete were needed.

WEST FRONT.

Having settled on the site, the next great question was the design of the cathedral. Early in the seventies a Gothic design had been prepared by the late Mr. Henry Clutton, but that was for another site, now abandoned, and consequently it was set aside. Then a competition was mooted, in which J. F. Bentley was invited to take part, though he declined to do so. Eventually the competition idea was dropped, and in 1894 Bentley was given the work.

THE SUMMIT OF THE CAMPANILE.

It needs no comment to show that the design of a cathedral destined to be the greatest since the Reformation called for long-matured thought. Bentley regarded his task in that light, and with the object of studying the great examples of southern Europe, he paid a six months' visit to Italy, devoting particular attention to the northern cities; and there, in the churches of Ravenna, he formed his decision as to what the new Westminster Cathedral should be, remembering all the time the expressed wish of Cardinal Vaughan that the building should not be any particular phase of Gothic, but a development of the first Christian architecture — Byzantine. The plan was of course the initial problem, and as showing the architect's position, I may quote the Cardinal's words: "Having," he said, "laid down certain conditions as to size, space, chapels and style, I left the rest to him.

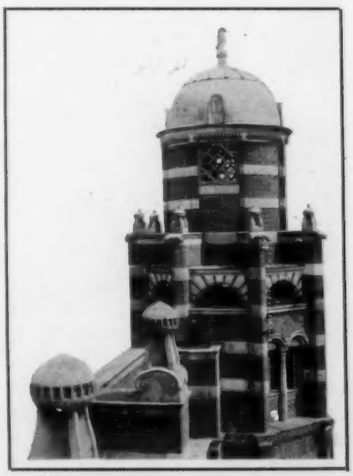
LOOKING TOWARDS NORTHWEST.

He offered me the choice between a vaulted roof and one of saucer-shaped domes. I chose the latter. He wished to build two campaniles. I said one would be enough for me. For the rest he had a free hand." Bentley, indeed, built his very life into the cathedral, and it now stands as the embodiment of a great architect, who not only evolved every detail of its design, but also with masterly skill solved the many constructional problems that make the building of exceeding interest.

It will be seen from the accompanying plan that the cathedral is really a vast nave and sanctuary covered by four saucer domes; and one has only to look up at these latter, more than one hundred feet above the floor, to appreciate the splendid conception of the architect, the more so when it is understood that each dome weighs seven hundred tons, being of sixty feet diameter inside, constructed of concrete three feet thick at the base, diminishing to thirteen inches at the crown. Then there are

FROM THE SOUTH.

the arches of the nave, ninety feet high, giving an immense feeling of space and majesty to the interior. No words can describe the impression which the beholder receives. Yet an idea of it is given by the illustrations (for some of which — those of Mr. Dockree — I am indebted to *The Architectural Review* of London), and in studying them it is well to remember that this nave is two hundred and thirty-four feet long and sixty feet wide, — by far the widest nave of any cathedral in Great Britain and not much shorter than the longest of them, York being two hundred and fifty-one feet and Ely two hundred and eighty-one feet — while as regards height it surpasses any other, being one hundred and nine



UPPER PART OF A STAIR TURRET.

UPPER PART OF A STAIR TURRET.

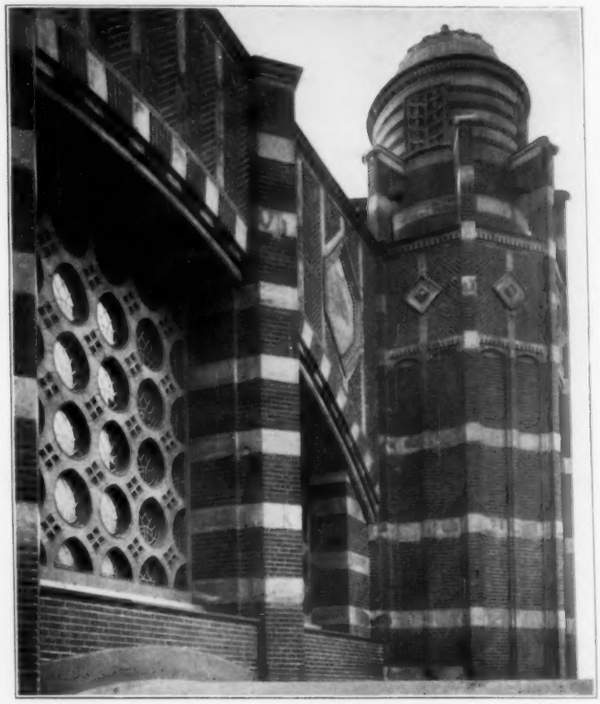
feet, as compared with Westminster Abbey one hundred and five feet, York ninety-three feet, and Ely seventy-two feet.

It will serve no purpose to describe the disposition of the various parts of the cathedral, as these can be best seen from the plan and section. I may therefore go on to describe some of the structural details. Of the domes I have already given a few particulars, but it should be added that above each is a shell built up of artificial stone slabs three inches thick, diminishing in size towards the crown, with a two-inch ventilating space to prevent expansion of the concrete, which would inevitably occur in summer. The domes were thrown on to a centering supported from the floor, the concrete

NORTHEAST PORCH.

consisting of four parts of clear, broken brick (soaked in water before mixing) and one part of Portland cement. Seatings of pendentives are of old granite and York stone in corbel courses. The three domes covering the nave are blind, but that over the sanctuary is pierced with twelve windows, each flanked by counterforts.

The walls of the cathedral are entirely of brick, — in fact the whole structure is a vast piece of brickwork, no iron or steel being used anywhere and only a very small quantity of wood, so that the cathedral should prove



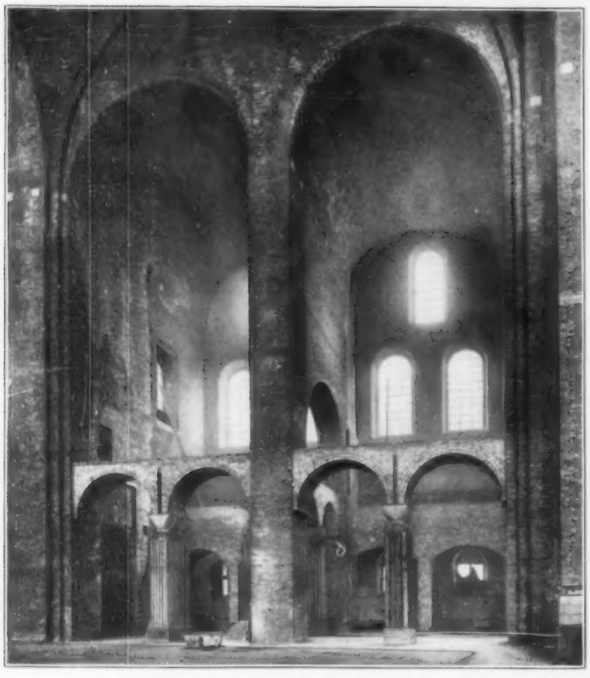
PORTION OF WEST WINDOW OF NAVE.

eminently fire-resisting. Faversham stocks have been used inside and two-inch red Bracknell bricks for the outside facing, Flettons being employed for the large piers and blue Staffordshires for the outside facing of the underground vaults and sacristy (also for the damp-courses), being set in nearly neat cement. The mortar was composed of one part Portland cement to three of sand. Courses average four to the foot and are flushed up solid. The facing is bonded to the backing with one course of binders to four of stretchers.

Of stone there is not a great deal in the cathedral, its chief employment being (Penrhyn granite) for the plinth and dressings to doors and windows, etc., together with Portland stone.

A noteworthy feature is the terra-cotta tracery of the large windows, as shown by the accompanying photograph of the west window of the nave. This tracery is built of small-sized pieces joined together, the glass being chiefly roundels slightly tinted, for it must not be forgotten that most of the light comes in between the nave bays. The lighting is particularly fine, especially through the windows of the sanctuary and the choir. And it may here be added that the acoustics of the cathedral are excellent.

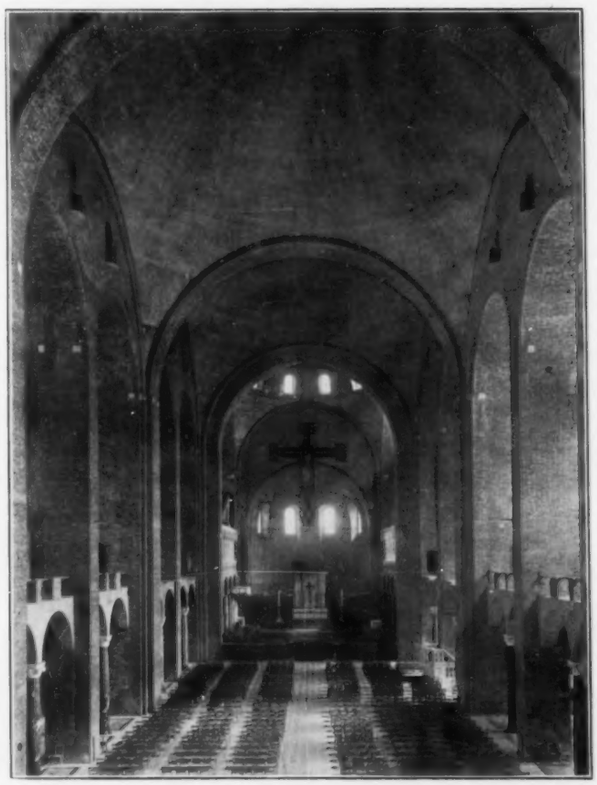
Turning to the details of the interior, the marble columns on either side of the nave may be first noticed. These are monoliths thirteen feet high and are of Verde



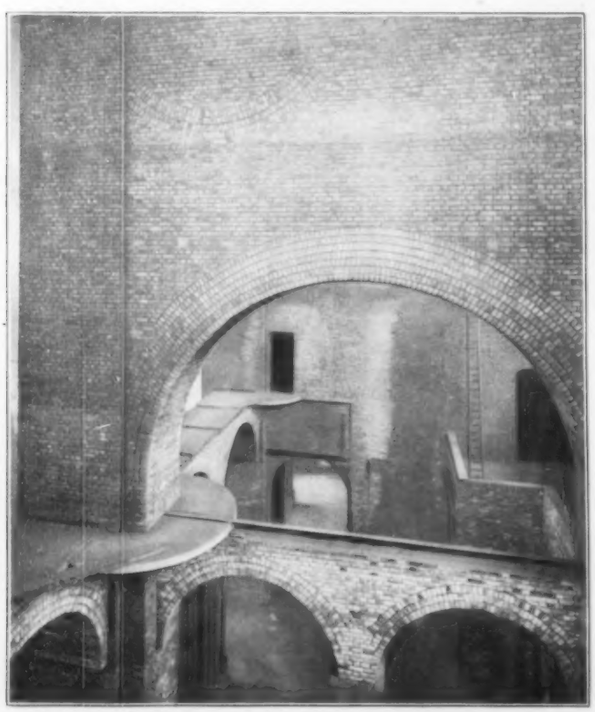
NORTH TRANSEPT FROM NAVE.

Antico from the reopened quarries at Larissa in Thessaly, and a specially interesting fact about them is that they are probably the first taken out of the quarry since the time of Justinian, in the sixth century. The figure of the marble is most beautiful and varied. In the sanctuary the columns are of jasper and red Norwegian granite, with fourteen of pavonazzo in the sanctuary galleries, which also comprise much marble work. The caps, of alabaster, are all different in design and show the architect's resourcefulness in developing Byzantine detail.

It is of course intended that the interior shall be lined entirely with marble and mosaic, but this will not be completed for many years to come. Some idea of the ultimate effect, however, can be gained from the one or two side chapels which have been finished in this manner. The marble work is exceedingly fine and the mosaic beautiful in color, though the attenuated figures characteristic of the old Byzantine work are not altogether pleasing, and the same remark applies to the large painted crucifix that hangs in mid-air above the sanctuary. The



NAVE.



VIEW FROM WINDOW IN NORTH TRANSEPT LOOKING DOWN.

mosaics, it may be noted, have been laid by a school of ladies under the direction of Mr. George Bridge.

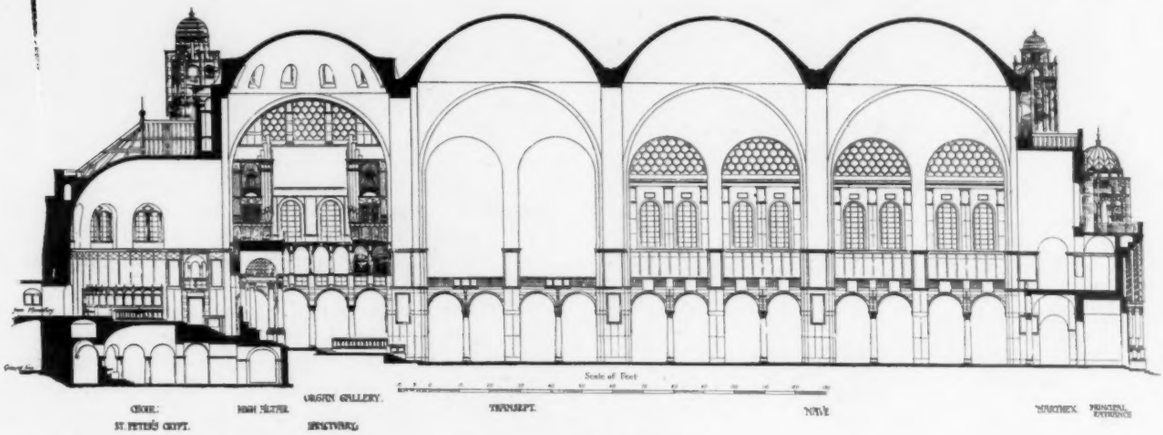
Of other finished marble work in the interior there are the pulpit and the throne, as well as a very large font in the baptistery, while the columns of the crypt are worthy of special attention; also the floor at the west end of the nave, which is of marble laid in a bold design, though the rest of the nave is wood-blocked.

A great feature of the interior will be the baldachino above the high altar. This will be flanked by eight columns of onyx fifteen feet high, supporting a marble canopy, and will be the focus of the sanctuary. The choir, it will be noticed, is placed behind the altar, about thirteen feet above the nave floor, and beneath it is St.

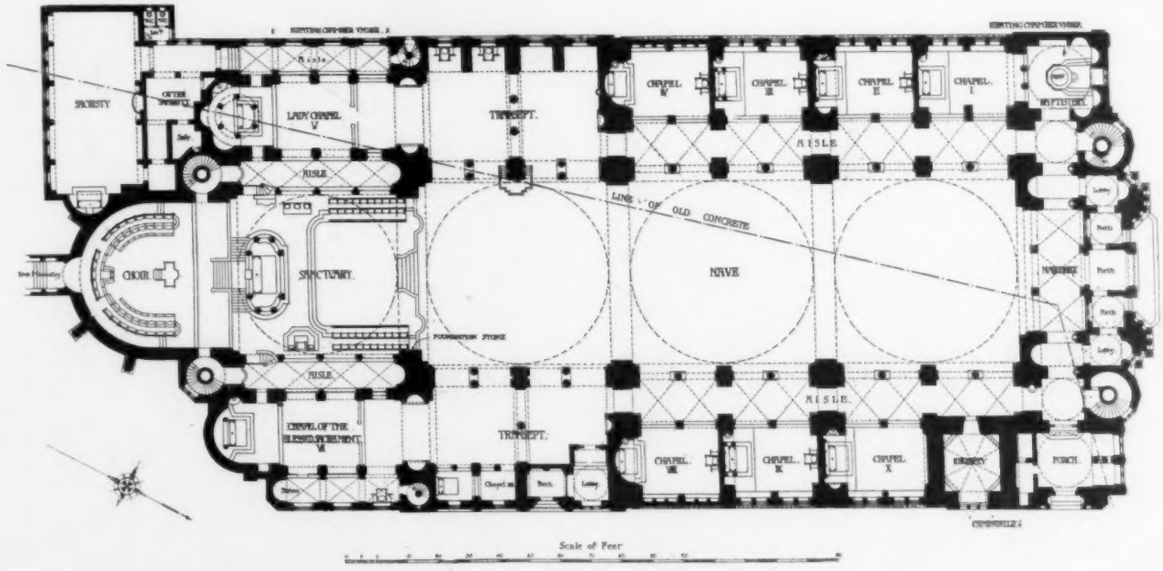
Peter's Crypt, the organ being arranged in the sanctuary galleries. Other details must be left to the illustrations, though I may add that the interior is to be heated by hot air, supplemented by low-pressure steam pipes in the galleries, while the nave will be lighted by electroliers suspended at regular intervals.

Having now described the interior, I may turn, in conclusion, to the campanile and west front. It is interesting to note that the former, called St. Edward's Tower, is thirty feet square and two hundred and eighty-four feet high to the top of the bronze cross, which itself is ten feet high. The campanile has a slight entasis and is gathered to an octagon at the summit, which has a lead-covered cupola round about it, being stone figures of birds gazing over the world of London that lies so far below. Much of the ascent of the campanile is by easy stairs on each face, but toward the top one enters the more usual, though infinitely more fatiguing, circular stairs. The trouble of the ascent, however, is well repaid, for the view on a fine day is remarkable.

The west front of the cathedral is not to be judged in its present state. A hoarding still surrounds it, and the great tympanum is as yet in rough brickwork, instead of the rich mosaic which is eventually to fill the space. The entrance arch is of forty feet span, this being four feet more than St. Mark's, Venice, whence the architect



LONGITUDINAL SECTION.



GROUND PLAN.

evidently went for an object-lesson. Every one will agree that the west front is a very fine piece of work, but it is to be regretted that the columns of the entrance should have been marred by the eight stone medallions, which quite break up the lines.

Adjoining the cathedral is the archbishop's house, from which a covered way leads into the choir.

Such is Westminster Cathedral. Opinions may differ about its design, and there may be a sense of disappointment with the general exterior massing from some points

DETAIL OF CHOIR WINDOWS.

of view, but the building is clearly the work of a very gifted architect,—a man who gave himself up entirely to the task, involving such calls on energy as brought about a tragic death, for he died suddenly of paralysis on Sunday, March 3, 1902, one day before he was to have been presented with the Royal Gold Medal. He never lived to see his cathederal finished, but we who now look on it can remember the architect and pay tribute to his memory.

DOMES OVER NAVE.

Some Minor English Domestic Brickwork. I.

BY FRANK CHOUTEAU BROWN.

NOWADAYS, when the expense as well as the attending difficulty of procuring good wood for exterior house treatment is tending to make the use of brick for this purpose yearly more and more possible, we should regard the simple dwellings and small cottages where this material has been most successfully employed with special interest. England abounds with examples upon which we may found the development of a style of architecture; varied to more exactly suit our own local, climatic .and personal needs.

The indiscriminate and reckless deforestration that is denuding this country, annually decreases by billions of feet the amount of timber available for building purposes. Its yearly greater scarcity and consequent greater increase in cost have so far caused no attempt to be made at systematic replanting, nor has any general recognition of the serious aspect of the case yet been secured. The government reports that in less than twenty-five years, at even the present rate of consumption, the available supply of timber will be almost exhausted, has created little comment; yet this means within a few years, possibly a half dozen only, that the market price of timber will, used as it now is for building purposes, be practically prohibitive.

Abroad even the humblest cottages are built of stone or brick, whichever is the more available local material, as the case may be. A modern wooden building is a curiosity that is seldom seen. There are even many substitutes for wood finish upon the European market, and plaster is used in such a way as to more and more take the place of much of the interior trim that is so recklessly used up by our own wasteful building methods.

Abroad wood is seldom seen in the large planks that are commonly used for the framing of dwellings in America. In one small English village the stone steps in the center of the market place are covered with heavy wooden plank, and these pieces of wood are considered such a precious curiosity by the natives that they never walk or sit upon them without first covering and protecting the wood.

Wood as an exterior covering is at the best a makeshift; yet so much are we accustomed to its use in this manner that we fail to obtain a true perspective and forget that this country stands almost alone, if we except some nations and countries that we persist in considering "uncivilized," among the modern nations of the world in the universal erection of wooden buildings for even expensive dwellings.

We have forgotten that our so-called "Colonial" type of dwelling was adapted from the English brick Georgian residence, and that the earlier American houses were nothing more nor less than an imitation, in wood, of a brick and stone style of architecture. This wooden residence we have developed through many periods of changing styles until the present day, when the circle has been run and we find ourselves again, with the price of wood

OLD BUILDINGS ON BOLD STREET, LIVERPOOL.

that was derived from the English brick dwelling, the development of woodwork as a building material reached its apotheosis in the fussy design and "gimcracky" ornamentation of the architecture of a period of a dozen to thirty years ago. Since then a saner taste, and the general development and growth of a wider and more cultured interest in gardening and in the various arts, have gradually brought us around to a point where we are quite prepared to appreciate the possibilities latent in the brick building; and so we may resume the development of an architectural style in this permanent material at almost the point where it was abandoned more than a hundred years ago.

Other countries have not lost all this time circling around and around in this architectural back-eddy but, in England especially, have continued to progress; logically modernizing and applying to modern problems in architecture the forms and details which they had inherited. Therefore it is that the American designer, in taking up the study of brickwork, should turn at once to the more progressive architecture of England to see what the architects of that country have produced during the interim; but first it is necessary that he should realize thoroughly the available historic architectural material with which they have had to work, and in no way better than by reverting to some of the simpler English dwellings erected before and up to the time of the Revolution may this be secured.

The advantages of brick as a building material seem quite obvious. It is durable, it requires no paint at regular succeeding intervals, and necessitates but little care after it is once in place. It is non-combustible, and the mere additional security from fire and the insurance advantages of a reduced risk, should do much towards recommending it to many people. It has many other utilitarian advantages, and some sentimental ones that are as a building material at a level where it about equalizes the cost of brick, at almost the identical point of departure.

Meanwhile the wooden building, as such, has logically fulfilled its destiny. Starting from the simple form

COPPERAS HILL, LIVERPOOL.

GEORGIAN HOUSE AT PETERBORO.

only beginning to be appreciated. In the first place, the material itself demands great simplicity of architectural treatment; this also chimes in with the modern tendency in architectural design. The brick house allows of surrounding shrubbery and climbing vines, as they do not then affect the life of the building; again, the advantages of the garden are just being realized by the American householder. How much of the charm of the English dwelling depends upon its garden and surroundings and the overgrowing vines which partially hide it from the passer-by, is probably not yet fully acknowledged by our traveling public; but already they realize something of what a factor these surroundings are towards the general effect that has so much pleased them.

Nowhere can one get a more instant and distinctive idea of certain of the qualities inherent in the brick architecture of England than at Liverpool. In this city, where the great majority of traveling Americans first land, will be found many interesting buildings of brick, some of which are evidently closely allied with the style of brickwork that in this country we term "Colonial"; but first and foremost it is the effect of simplicity that is notable through this as well as all English brickwork.

It is especially true of the buildings built in Liverpool and vicinity, although the cause of this may not at first be apprehended. It may require several hours' rambling around the interesting side streets of the city, and especially the streets lined with the old brick residences, before one discovers that the brick itself is of a different size than that to which we have been accustomed in our own country. It may be along some window jamb that this fact will first be noticed; it may be that the size of the quoins on the angle of the building will first disclose the different scale of the brickwork, or an observant individual may note in some flat brick arch the different size, if similar proportions, of the individual forms. This fact once realized, an idea of the influence that the size of the brick unit has on the whole effect of the building may be obtained. It means, of course, that the building must

OLD HOUSE, RODNEY STREET, LIVERPOOL.

OLD HOUSES AT CHESTER.

be kept even simpler and more restrained than if a smaller size of brick were used. These bricks are rather larger and more crude than the American form, being, as I had the curiosity to measure them for my own satisfaction, 3 inches by 4½ inches by 9¼ inches in size.

Liverpool is surrounded by a country producing the natural stone with comparatively little expenditure of time and labor, and when one has passed beyond this district it will be found that a brick more nearly approximating the American size is being used.

HOUSES ON RODNEY STREET, LIVERPOOL.

Although the architecture of the country side, what may be called "urban" architecture, is the one that we generally see illustrated and reproduced, the actual traveler cannot but notice the tremendously simple street façades in the cities themselves; often produced entirely in brickwork, with the occasional exception of the use of the stone lintel across the tops of the openings: although many examples there are where even this small amount of trimming has been omitted, and the entire structure built simply of these large plain bricks. Not only do the bricks compose the wall surface and the arches over the windows, but also the cornice, the water-table, the sill and belt courses are laid up in simple projecting bands of brickwork. The Inn at Peterboro is an instance, although this particular example lacks somewhat of the usual charm of composition that seems to have been relied upon by the English builder to obtain the effect towards which he was evidently aiming. These modest village stores and buildings are seldom illustrated and rarely photographed, but the two streets in commercial Liverpool will help to show something of what is meant in this especial connection.

The old house on Bold Street at Liverpool, with the simple cornice and horizontal moldings, well proportioned and placed window openings, shows something of this effect; an effect not entirely spoiled, even though the lower story is now made over into stores, and the entrance — which the central window in the second story then made more emphatic — is now lost to us. Or the simple Georgian house at the end of the street in Peterboro, where the only stonework is the keys of the eight windows, the coping of the plain brick parapet with the four urns evenly placed along it, and the finish around the Palladian window over the doorway, itself as simple and restrained almost as it is possible to be; while any visitor to Oxford or Cambridge cannot fail but be impressed by the character of the simpler brick structures that there line the streets.

The treatment of the houses in the older residential portion of Liverpool, which in a conservative English community means also the residence portion of to-day, should be full of suggestion to the American architect situated in the one or two cities of his own country where a similar type of city house treatment is demanded of him. Some of the simpler houses in the better residence quarters of the town are shown in the illustrations, and their close relationship to the type of building erected in the principal eastern coast cities of our own country a hundred years or so ago is at once apparent. The better type of Liverpool residence is illustrated in the view on Rodney Street, where the entrance doorways and second-story iron balconies are not at all unlike much of the early American Colonial city work. The principal difference is noticed in the roof; in place of the flat pediment and slight pitch of the English houses, the American climate has suggested, and the demands of the householder for larger

GABLED HOUSE AT PETERBORO.

GOTHIC HOUSE AT LINCOLN.

attic rooms has emphasized, the adoption of a much steeper roof.

The repetition of houses of too exactly this type for block after block does slightly tend to produce a feeling of monotony, and were it not for the frequent lightening of their fronts by the trimmings of white stone, or even occasional touches of white paint, they would be even more montonous than they now seem.

Nowhere does the quality of English brickwork receive so severe a test as along these city streets, where there are no adventitious aids, as in the country, for hiding the bare proportions of the building, leaving it to depend alone upon these, and the color and texture of its building materials for its effects. The brick itself, when of this larger size, of course produces a certain largeness of scale and coarseness of texture that are emphasized by the large thick hollow joint in which most of this English brickwork is laid; but it probably has considerable to do with the effect of sobriety and dignity which these buildings produce. However picturesque they may become under certain conditions they are never in the slightest particular undignified, while the material itself seems to have imbued both the builder and designer with the correct feeling for its proper usage.

The subtle quality inherent in all English domestic brickwork does not belong so much to the material as to the simplicity and domesticity of the building itself. It is an absolutely natural solution of the problem in its simplest form of expression, and whether the building is composed of the local stone or its artificial substitute, whether the roof is thatched or slated, the outline is generally suited to the plan, and the composition almost always charming. No matter how small the village nor how unpretentious the country side, it has its little brick or stone cottages and stores, its bridges, walls and gateposts, its gardens, shrubs and winding paths. Occasionally there is some half timber in combination with brickwork, sometimes the plastering being still in place, or again it may have fallen away, but the half timber dwelling is becoming scarce and is more and more seldom seen throughout England.

The charm of the English dwelling, while hard to

GARDEN FRONT, HOUSE AT LINCOLN.

describe or analyze, is nevertheless unmistakable, and if it may be defined in any way, it is most impressive when the dwelling itself is simplest; always, to be sure, the added effect of grounds, surroundings and shrubbery is in evidence; but even taking into account and laying to one side the effect of these adornments, the buildings themselves are impressive because of the very simplicity and unpretentious directness with which the builder solved the problem presented by the plan of each house.

A certain regularity in regard to the window placing is shown, to be sure. A certain amount of importance is generally given to the doorway, which may even extend to a pediment placed above the main cornice of the house with a Palladian window in the second story centering over the doorway, while sometimes the central portion of the façade is broken out and projected from the main wall of the building, and the corners are emphasized by a pilaster or quoin treatment in brick or stone. Yet the dominating principle of the whole

JAMES STREET, LINCOLN.

building is so evidently based on good proportions, simplicity and directness of treatment, that we find in many instances that the very simplest dwellings are the most pleasing, and where the designer has chosen to elaborate overmuch his central entrance feature that the building has distinctly lost in charm and treatment; and it is rare indeed when an addition of pilasters to an otherwise simple and complete scheme has improved it in any particular. Rather have they detracted from the charm of the building by adding to it formality and pretension; and even though their effect is more pompous and impressive, the beholder is almost invariably conscious of the loss in both human charm and appeal that their employment has cost.

The older examples of English brickwork naturally divide themselves into four general types, one of which, the half timber frame dwelling, as in the houses at

OLD HOUSES IN ST. MICHAEL'S LANE, DERBY.

Chester where brick has been used to fill in between the timbers, and either left exposed or covered with cement and plaster, may hardly be considered as important in this connection. The second division is that shown in the two illustrations of city houses in Liverpool. These examples are comparatively late in date and, in fact, may not be considered as much dissimilar from many dwellings still found in Baltimore and other early developed cities along the Atlantic coast. Further, as houses of this plan are only used in three or four of the larger and more crowded cities in this country, and for the majority of these dwellings a more pretentious style is now customarily demanded, the remaining two divisions are therefore the more important ones, and they may be roughly classified, according to the style of the dwellings, as either "Classic" or "Gothic." The majority of the examples of these last two types are almost equally well adapted to the problem of a country house or a residence in the less crowded portions of a city.

The Classic type is easily recognized by the generally formal treatment of its exterior. There is a well emphasized center line, the architectural forms being balanced on each side of the center, and the sides are rather more or less closely a repetition of each other. From this type of building the Colonial or American type-style of dwelling is a direct descendant.

The Gothic house may sometimes be less readily recognized. The gable runs to a sharp point that is quite different from the flat pediment of the Classic residence. The chimneys are more ornate, the windows smaller, gathered in groups with heavy dividing mullions and many diamond-leaded panes. In this form the style is defined enough, but often it attains to no such clear definition. Sometimes it is only by the general effect of the composition, the "unbalance," as it were, of a façade, that the architectural classification of the structure may be determined; and it is this type that the modern British architects have gone on developing, sometimes with a nice admixture of classic feeling and detail, down to the present day.

Of these two, the Gothic type of small dwelling is much more rare, and such interesting houses as those in Peterboro and Lincoln, with their pointed arches and gables, elaborately molded chimney tops, overhanging bay windows, and triple groups of openings with small hinged sash and heavy moldings; or the chantry at Lincoln and the old house in St. Michael's Lane at Derby, where a more picturesque and simple, if less regular, grouping shows the characteristics of this style, even though, in the window and door treatment, there may be traced some of the tendencies of the Classic dwelling.

There is at Lincoln a very interesting old dwelling now used for the internal revenue office that is equally as interesting as any of these, and the gable cottage at the end of James Street, Lincoln, is another less formal but more general type that is properly related to the early and more strictly Gothic dwelling. This same illustration shows in the house on the corner a typical British town dwelling, combining evidences of both Classic and Gothic derivation, quite simple and unostentatious; and yet, from its good proportions, refined openings and general detail, interesting and pleasing in the great majority of instances. The dwellings shown in this illustration might be found in any English village outside of the districts where stone as a building material is generally used, and here, side by side, we find examples of the Gothic and Classic form of English dwelling in their less easily recognizable aspects. Particularly pertinent to the American architect is the treatment of the bay windows shown on one of these houses. The English Classic house fortunately, as a rule, lacks the bay window, — that feature which has flourished to such an unwholesome luxuriance when transplanted to American soil. The Gothic type of house allows of its more consistent treatment, but when grafted upon the Classic exterior it becomes at once a source of annoyance and trouble to the designer; yet in this example, for instance, it is treated so quietly and consistently, in so much the same manner as if it were not considered an unfortunate occurrence by the designer, that it does much towards causing it to remain an unobtrusive part of the plain wall surface of the building.

Notable Fireproof Buildings now being Erected at Chicago.

THE development and progress of the art of fireproof construction in America are now being shown by many illustrations at Chicago. Modern systems of practical fireproofing, to the inception of which New York should have the credit, were brought to the greatest perfection at Chicago twenty years ago. These methods have been constantly improved and are the examples which have been followed in nearly all of the large cities of this country. They were used in several of the great buildings at Baltimore which best stood the test of the recent conflagration, and the buildings now being erected in Chicago give evidence of improvements based on that experience wherever it showed the need for it.

It is worth mention at the start that all the buildings in the list to follow are fireproofed by burnt clay methods, and many of them are to be completely finished with materials manufactured from clay. After careful inquiry it is believed that the list comprises *all* of the larger fireproof buildings now in course of construction, leaving out those recently completed or those the projects for which have been recently perfected and which are yet to be commenced. The majority have been planned and contracted for since the Baltimore fire.

Holabird & Roche have three buildings in charge, the Republic, the Chicago Savings Bank Building and the Palmer Building.

The Republic is a twelve-story retail business building. The ground floor will have several shops entered from the street; the second floor will be occupied by a bank, and the straight hallways on each floor above this will be like streets on which small shops or offices will front. It is altogether a new idea, and will be in the nature of a department store in which all the departments are independent. Its dimensions are 100 feet on State Street, the same on the alley in the rear and 145 feet on Adams Street. It has a basement and sub-basement and twelve stories above ground, and the foundations and steel construction are calculated for five stories more, which may be added at a future time. The height above the street is 195 feet, while the depth of cellar is 27 feet. The construction is all steel skeleton with I beam floors, and the entire exterior is white enameled terra-cotta. The whole fireproofing is of porous terra-cotta, with flat hollow tile arch end pressure floors. In the finishing the floors of rooms will be hard wood laid tightly on concrete and nailed to wooden strips; but the corridors, toilet rooms and principal stores will be of marble or tile mosaic work. All the windows, except on the two street fronts, have hollow metal frames and sash, and are glazed with wired glass. All the shafts have metallic doors, and the whole building is to be equipped with an automatic sprinkler system.

The Chicago Savings Bank Building is on the busiest corner in the whole city. It fronts 48 feet on State Street and 120 feet on Madison Street. It will be fourteen stories high with basement and sub-basement, and will rise 198 feet above grade and extend 28 feet below grade. It will be occupied by stores and offices, and the savings bank will occupy the second floor. The foundations of this and the last-mentioned building are concrete columns carried down in wells to about ninety feet depth. The superstructure is all steel skeleton construction, including I beam floors. An effort will be made to erect the entire steel skeleton in sixty days. The entire exterior will be finished in white enameled terra-cotta, and the interior, including the flat end pressure floor arches, will be constructed with porous terra-cotta. The inside finish and windows will be the same in all respects as that of the Republic Building. It will also have a complete automatic sprinkler system. The introduction of this system in office buildings is new for such application. It is a recognition of the danger of fire from the contents of such buildings, which the owners are not able to control in any other way.

The Palmer Building, built for wholesale mercantile purposes, fronts 73 feet on Adams Street, 45 feet on Quincy Street and 164 feet on the river. It has fourteen stories above ground, rising to a height of 198 feet, and two stories below grade, extending down 28 feet. The same system of construction and fireproofing as in the two last-mentioned buildings is followed, except that it is faced with pressed brick and unglazed terra-cotta. All exposed window frames and sash will be of metal, glazed with wired glass.

The fireproof buildings in charge of D. H. Burnham & Co. are the First National Bank, the Heyworth Building, the Chicago Orchestra Hall and the Field Warehouse.

The First National Bank Building fronts 191 feet on Dearborn Street and 231 feet on Monroe Street. When completed it will probably be the largest office building in the world. The first section, fronting on Monroe Street, is completed; the balance is completed as far as the steel skeleton is concerned. It is seventeen stories or 257 feet high above the grade, but has only one story in the basement below the street grade. The ground floor will be rented out for stores and offices, the second and third stories will be used for the bank, and the balance will be for business offices. It is said that it will cost when completed $3,400,000. The exterior is faced with granite, and the whole interior is constructed with semi-porous hollow tile, end pressure flat arches between I beams for floor construction, and the fireproofing is complete in all other respects with semi-porous terra-cotta. Standpipes and hose will be depended upon for interior fire protection.

The Heyworth Building will provide for stores on the first floor and offices above. It fronts 80 feet on Wabash Avenue and 181 feet on Madison Street. It also has an exposure of 80 feet on an alley. It is to be seventeen stories or 257 feet high above the street grade, and the excavation for three stories below the grade is forty feet. The construction of this cellar, now completed, is a magnificent example of architectural engineering. The cost will be about $1,100,000. The steel skeleton frame will be finished on the outside with pressed brick and terra-cotta. The flat arch system will be used for the interior construction, and all the fireproofing will be with porous terra-cotta, using flat hollow tile arches for floor construction. Standpipes connected with tanks and fixed hose will be depended upon for fire protection.

The Chicago Orchestra Hall has a frontage of 105 feet on Michigan Boulevard and is 171 feet deep. It contains, besides the Music Hall, Recital Hall and Rehearsal Hall, studios for musicians and other artists. It will cost $300,000. The exterior will be finished on the steel skeleton with pressed brick trimmed with cut stone. Flat arch construction will be used for the floors, and the whole interior will be fireproofed with porous terra-cotta. No combustible material will be used in the auditorium, and only the studios will have wooden floors and finish. All doors will be of metal.

The Field Warehouse will be for the storage of goods for the firm of Marshall Field & Co. It will stand free from contact with other buildings, and covers 135 by 286 feet on the ground. It will be fourteen stories or 176 feet high above grade and 15 feet deep below the grade of street. The cost will be $600,000. It is steel skeleton construction, finished with brick on the outside. The flat arch system will be used for the floors, all of which will be of semi-porous terra-cotta. The partitions will be of brick. All window frames and sash will be of sheet metal glazed with wired glass. All doors will be of steel. There will be automatic doors in the fire walls, and the whole building will be equipped with an automatic sprinkler system.

Frost & Granger are architects for the new office building of the Chicago and Northwestern Railway Company, which will occupy the entire building. It is located at the northeast corner of Jackson Boulevard and Franklin Street. The dimensions are 105 by 166 feet, and it will be fourteen stories high. The total height above grade will be 209 feet, and the depth below grade will be nine feet. The foundation consists of fifty concrete piers, carried down in wells ninety feet below datum to natural rock. The system of fireproofing for the floors is flat end pressure hollow tile arches between I beams. All constructive work is firepoofed with the same.

On the court side fronting Quincy Street all window frames and sash are of copper, and glazed with wired glass. This court is also protected by a water curtain. It has standpipes with hose connections throughout. The office floors are of hard wood and all others of marble tiling. The two sides of this building which front on streets will be faced with granite, and all others including the court, with brick.

Jarvis Hunt is architect for the Rector Building at the southeast corner of Monroe and Clark streets. The building will be 90 by 91 feet on the ground and fourteen stories high, with a basement eleven feet deep. The height above grade will be 179 feet. It stands on concrete piers 75 feet deep below datum, built in wells where it adjoins other property, and fifty-foot piles in other parts. It is designed for an office building, but Mr. Rector will use the first floor for his restaurant. The estimated cost will be $550,000. The general construction will be a steel skeleton finished on the exterior with a polished granite base at the ground level. The first and second story fronts will be Bedford stone, the intermediate stories will be faced with paving brick, and the upper stories and cornice will be terra-cotta. The court walls will be faced with white enameled brick. The floor construction and fireproofing throughout will be of semi-porous terra-cotta, using flat end pressure arches. The inside finish will be of wood, but all windows on the court will have metal frames and sashes glazed with wired glass.

Samuel A. Treat is architect for the new plant of the Western Electric Company at Hawthorne, one of the western suburbs of Chicago. There are now twelve buildings in various stages of construction. The several buildings vary in dimensions from 820 by 175 to 100 feet square. The estimated cost for buildings alone is $1,500,000. The ground area of twelve buildings is eleven acres. Steel skeleton construction is used throughout, and all are enclosed in brick walls. While it has been inexpedient to protect from fire the roofs of these buildings, all of which are trussed, care has been taken to avoid the use of any combustible material in them. In some cases book tiles are used, set between I's, and in others Ludowici roofing tiles are set on steel purlins, and where the buildings are more than one story in height the floors have hollow tile segment arches between I beams. Some of the buildings are four stories in height, and in these all the steel construction supporting floors is fireproofed with semi-porous hollow tiles. All of the buildings are supplied with automatic sprinkler systems as well as fire hydrants and hose.

Christian A. Eckstorm is architect for the Patent Building. It fronts 102 feet on Harrison Street and 118 feet on Sherman Street, and is twelve stories or 168 feet high above grade. It has a basement nine feet deep. A party wall on one side is built on concrete piers carried down in wells about ninety feet to rock, and the remainder of the foundation is in fifty-foot piles. It has steel skeleton construction throughout, and is faced on the two streets with re-pressed paving bricks. The owner originally intended to use concrete systems for floor construction and fireproofing, but when he became satisfied that they were not best for his purpose he contracted for porous terra-cotta flat arches and fireproofing throughout; the result showed an actual saving over the cost of hard concrete. This building is one of the best illustrations of the lesson learned from the Baltimore conflagration. All combustible material for finish is avoided, and the floors are all finished with concrete on the floor arches.

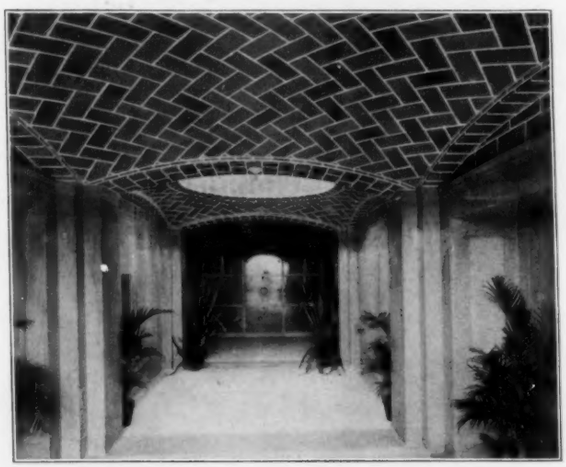
The above consensus, showing how an aggregate of $11,000,000 is being invested in fireproof buildings in one city, demonstrates not only how the importance of fireproof construction is appreciated by capitalists, but illustrates certain advances in the field of fire protection of fireproof buildings. The first and most noticeable fact is that *all* of these buildings are being fireproofed with the products of burnt clay, on which is placed the sole reliance for preventing the collapse of steel skeletons with which they are constructed.

It is noticeable that in all of these buildings in which there is a rear exposure, resort has been had to incombustible window frames and sash, glazed with wired glass. It is noticeable also that only two of the buildings are faced with granite and one only partially with stone; all the others with brick or terra-cotta. It is noticeable also that there is an increased use of the sprinkler system in a class of buildings in which it had not before been used. But altogether there has been a certain advance in the desire to secure protection from fire otherwise than in the use of standard systems of interior construction.

Editorial Comment and Selected Miscellany

BRICK AND CONCRETE.

THERE is a practice which is quite prevalent but which ought to receive the condemnation of every constructor. In building foundations for columns the substructure is generally carried up either in concrete or granite to approximately the level of the bedplate, and the remaining few inches are not set in place until the construction is ready to receive the columns. The piers or walls are then carried up in brick to the exact height necessary to receive the bedplate of the column. This construction is all right provided the bedplate is proportioned to the safe strength of brick, but usually the bedplates are assumed to rest directly on the granite or the concrete of the pier or wall, and in estimating the area of the plate no account is taken of the fact that brick may be used to fill in. Of course the resistance of such a pier or wall is measured entirely by its weakest point; and whereas we may load concrete with thirty



RECEIVING TOMB, SWAN POINT CEMETERY, PROVIDENCE, R. I.
Stone, Carpenter & Willson, Architects.
Guastavino Tile Dome Construction.

tons per foot, and granite with sixty, it is not good practice to trust over fifteen tons on brickwork. We have repeatedly seen cases where the loads placed upon such brick nogging ran up as high as forty tons per square inch. Of course this was very largely a theoretical rather than an actual load, but the continued stability of such construction reflected more credit upon the ultimate capacity of brick than upon the engineering knowledge of the superintendent who allowed such evasion to pass.

PERMANENT EXHIBIT OF BUILDING MATERIALS.

THERE have been some attempts in a few of the larger cities at various times to establish permanent exhibitions of building appliances and material. It is to be regretted that such exhibitions have not endured, but we feel they must in time be considered as a necessity in every large city for both the architects and builders. The trouble with most of them in the past has been that the greatest space and importance were given to the manufacturers or dealers who would pay the highest prices,

MAIN ENTRANCE OF A NEW YORK PUBLIC SCHOOL.
C. B. J. Snyder, Architect.
Terra-Cotta by the New York Architectural Terra-Cotta Company.

irrespective of the real worth of their goods, with a result that the standard articles which did not particularly need advertising were absent entirely, while the unknown products of real excellence, but of uncertain financial position, were unable to present themselves. The fostering of such exhibitions is a work which the master builders and the architectural societies should mutually consider a duty. The profession is too inclined to consider only what is actually thrust in its face, and the builders are usually too busy to bother about things which the architects do not specify; but there ought to be a common ground where, after passing a suitable advisory board, any appliances or product proposed for building

DETAILS BY GEORGE B. POST, ARCHITECT.
Perth-Amboy Terra-Cotta Company, Makers.

PARISH HOUSE, MISSION CHURCH, ROXBURY, MASS.
F. J. Untersee, Architect.
Built of Jewettville Red Brick, Boston Fire Brick Company, Agents.

operations, irrespective of its financial standing, could be admitted on its merits for a fair inspection and could be kept suitably presented for reference. No architect likes to encumber his office with a lot of dusty samples. Enough money is wasted every year by unwisely placed samples and circulars to independently support such an exhibition in every large city in the country.

BRICK BONDING.

ONE of the oldest subjects connected with brick laying is the style of bonding, and though so much has been written about it, and though every mason claims to know exactly what the various styles of bonding imply, it requires the closest supervision to obtain thoroughly bonded brick walls in ordinary practice. In late years the so-called Flemish bond has come largely into favor. We say so called, for the reason that a wall is seldom laid up throughout in the regular old Flemish bond. Usually the headers are clipped so that an outer screen of four inches of brick face is carried up for at least seven courses and then full headers put in to tie to the backing. As the interior of the wall is composed simply of parallel rows of stretches, it will be seen that the only tie, aside from the seventh course of headers, is that afforded by the adhesion of the mortar. In many cases this is insufficient to give a very solid wall, but if anything but the best of cement mortar is used and joints are not thoroughly filled throughout, the wall loses a great deal of its strength. The better way is to carry the bond up with every header full. This means carrying up the outer eight inches of the wall solid through seven courses and then

DETAIL BY D. H. BURNHAM & CO., ARCHITECTS.
Conkling-Armstrong Terra-Cotta Company, Makers.

DETAIL, EXECUTED BY EXCELSIOR TERRA-COTTA COMPANY.

BANK AT QUAKERTOWN, PA.
M. B. Bean, Architect.
Columbus Brick and Terra-Cotta Company Brick.
Bennett's Roofing Tile, Excelsior Terra-Cotta.
O. W. Ketcham, Agent.

successively heading over through the wall to get a tie clear to the inside with headers, constituting thus practically a double wall eight inches thick on the outer section and the balance on the inner. In the old-style Flemish bond, however, each course is complete clear through the wall, and as it is impossible to carry up face work or backing in advance one of the other, it is for that reason very little used. Furthermore, with full Flemish bond the bricks of the backing and the face work must of necessity be

DETAIL, EXECUTED BY ST. LOUIS TERRA-COTTA COMPANY.

DETAIL BY McKIM, MEAD & WHITE, ARCHITECTS.
Atlantic Terra-Cotta Company, Makers.

of the same size, and this is rarely possible in modern work; but for solidity of construction there is no method of building a brick wall so satisfactory as a full Flemish bond carried clear through the wall in every course.

NEW BOOKS.

ARCHITECTS' AND BUILDERS' POCKET-BOOK. A Handbook for Architects, Structural Engineers, Builders and Draughtsmen. Entirely new Edition, brought up to date. By Frank E. Kidder, C. E., Ph. D. Illustrated with 1,000 Engravings, mostly from Original Designs. 1656 pages. Morocco, $5.00. New York: John Wiley & Sons.

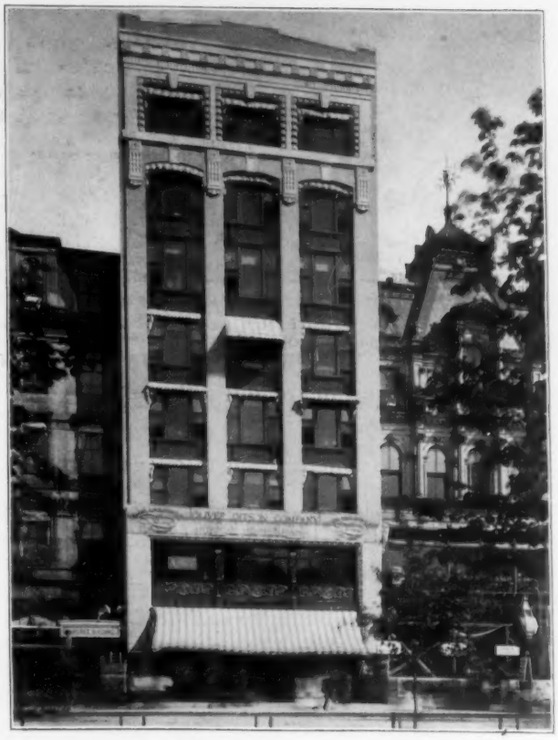
In this revision the author has had in view:

1. A reference book which should contain some information on every subject (except design) likely to come before an architect, structural engineer, draughtsman or master builder, including data for estimating the approximate cost.

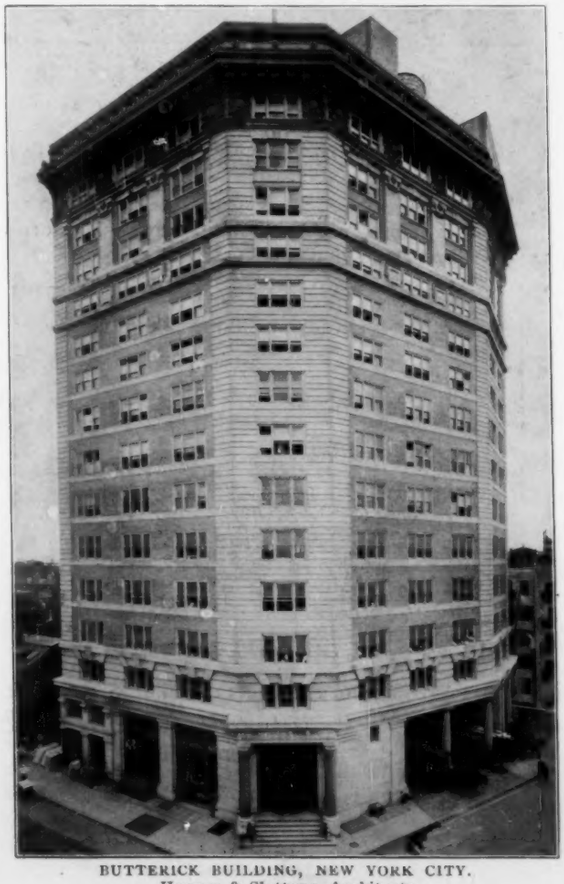
2. To as thoroughly cover the subject of architectural engineering as is practicable in a handbook.

3. To present all information in as simple and convenient a form for immediate application as is consistent with accuracy. To this end a great many new tables, arranged and computed by the author, have been inserted.

THE INDUSTRIAL AND ARTISTIC TECHNOLOGY OF PAINT AND VARNISH. By Alvah Horton Sabin, M. S.



LAWRENCE BUILDING, BOSTON.
Winslow & Bigelow, Architects.
"Shawnee" brick used, made by Ohio Mining and Manufacturing Company.
Atlantic Terra-Cotta.



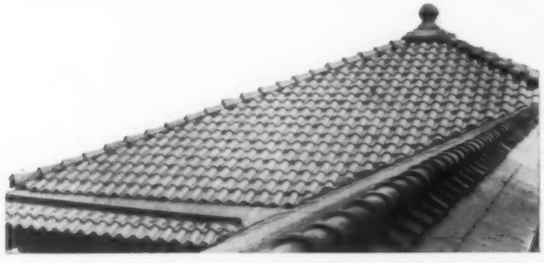
BUTTERICK BUILDING, NEW YORK CITY.
Horgan & Slattery, Architects.
Built of gray brick furnished by Kreischer Brick Manufacturing Co.

DETAIL BY STONE, CARPENTER & WILLSON, ARCHITECTS.
Standard Terra-Cotta Works, Makers.

RAILWAY STATION, MARION, IND.
M. S. Kaufmann, Architect.
Roofed with American "S" Tile, Cincinnati Ro[illegible] Tile and Terra-Cotta Company, Makers.

372 pages. Illustrated. Cloth, $3.00. New York: John Wiley & Sons.

The aim of the writer has been to give a correct general outline of the subject of paints and varnishes, with a brief account of their modern use and of the principles which are involved in their fabrication and application. Many of the facts noted, though old, are practically unknown, and some of them exactly anticipate recently patented processes; their value to the public in that way is sufficient excuse for their republication. Scarcely any patents in this line are of any value or validity; and the "secret processes" which are continually vended are



ROOF OF A BUILDING IN PITTSBURG, ON WHICH FOLSOM SNOW GUARDS ARE USED IN COMBINATION WITH TILE.

for the most part neither secret nor new. The only trade secrets lie in the incommunicable intimate knowledge of the expert, and are made valuable only by his unceasing care, vigilance and conscientiousness. Theories may, however, be made known, and the attention of the student may be intelligently directed to their application.

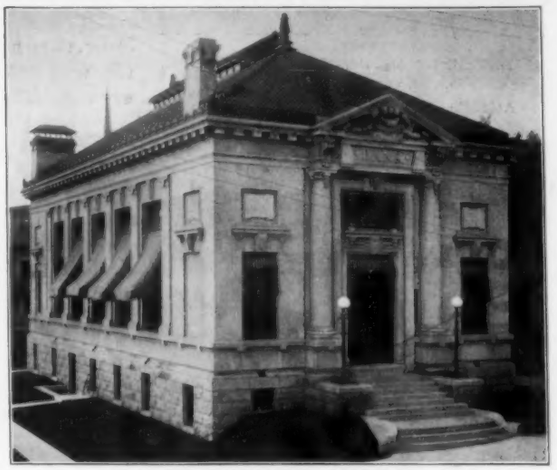
DETAIL, EXECUTED BY NEW JERSEY TERRA-COTTA COMPANY.

IN GENERAL

A partnership for the practice of architecture has been formed between William C. Brocklesby and H. Hilliard Smith of Hartford, Conn. Offices, 36 Pearl Street, Hartford, Conn.

J. E. and D. C. Allison, architects, Pittsburg, have formed a partnership under the firm name of Allison & Allison. Offices, 1023 Westinghouse Building.

Architects F. J. Shollar and Frank A. Hersh of Altoona, Penn., have formed a partnership under the firm name of Shollar & Hersh. Offices, Altoona Trust Building.



BANK AT CATASAUQUA, PA.
Wallace E. Rue, Architect.
Roofed with Bennett's Baltimore Roofing Tile.

C. J. Aschauer, architect, has opened an office at 502 Adams Street, Springfield, Ill. Manufacturers' catalogues and samples desired.

Fred J. James, architect, West Tampa, Fla., desires manufacturers' catalogues and samples.

DETAIL, EXECUTED BY THE BRICK TERRA-COTTA AND TILE COMPANY.

Enameled brick for the fronts of buildings are finding particular favor in many of our western cities. The façade of the new Rockefeller Building, Cleveland, Ohio, Knox & Eliott, architects, requires some 450,000 of these bricks. The new Wenger-Knapp & Clark Building, San José, Cal., and the large new building for the Minifie estate, San Francisco, Cal., will also have enameled brick fronts. These brick are being supplied by the American Enameled Brick and Tile Company of New York.

EXHIBIT OF THE PRODUCTS OF THE NATIONAL FIREPROOFING COMPANY AT ST. LOUIS.

The following list of contracts which has been awarded to this company will indicate the very general use to which

DETAIL BY AUDRY & BENDERNAGLE, ARCHITECTS.
Northwestern Terra-Cotta Company, Makers.

enameled bricks are now being put: 125,000 for the new St. Francis Hospital, New York City, Shickel & Ditmars, architects; 450,000 for the new Bellevue-Stratford Hotel, Philadelphia. Their brick will also be used in the Danforth Memorial Library, Paterson, N. J., Harlem Hospital, New York City, Horgan & Slattery, architects; Post Office Square Building, Boston, Winslow & Bigelow, architects; Abattoir for the New York Butchers' Association, Horgan & Slattery, architects (50,000 French gray and white brick to be used in this work); new Federal Building, Seattle, Wash., James Knox Taylor, architect; Providence Journal Building, Providence, R. I., Peabody & Stearns, architects; Municipal Power House, Philadelphia, Philip H. Johnson, architect; besides large quantities in the new houses for Hon. W. A. Clarke and Charles N. Schwab, Esq., New York City.

DETAIL BY HARRY W. JONES, ARCHITECT.
American Terra-Cotta and Ceramic Company, Makers.

WANTED: First-class draughtsman and designer. Young man preferred. Must be capable of taking charge of the draughting department. Address L. S. Green, 114½ Main Street, Houston, Texas.

WANTED: A competent general draughtsman to take charge of draughting room. One with technical training preferred. A good position for the right man. Address George B. Rogers, Fidelia Club Building, Mobile, Ala.

Good Work

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to-day and every day,
when you use the

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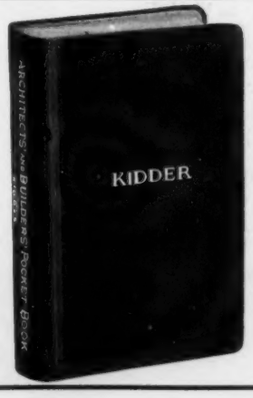
81 Franklin St., Boston, Mass.



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43 and 45 East 19th St., New York City

Competition for a Village Church

First Prize, $500 Second Prize, $200 Third Prize, $100

PROGRAMME

THE problem is an Episcopal Church in a large village. The location may be assumed in any portion of the United States. The lot is 80 feet wide on the west and 180 feet deep on the south. It is on a corner of two streets of equal importance. To the southwest a main avenue communicates with the principal square of the village, the grade of this street down to the square being 7 per cent. The lot itself is perfectly level and is in the residential portion of the village. The problem considers only a church with sacristies for clergy, choir and altar guild. At some future time the property immediately adjoining to the north is to be acquired, and on this property will be erected a parish house and rectory. The church will, therefore, be placed and designed with this future extension in view.

The church is to seat five hundred, the choir thirty. A small side chapel is optional.

The following points must be considered in the design:

A. Frank and logical expression of the prescribed material.

B. Historical and traditional associations of the institution for which the structure is provided.

C. Historical and architectural antecedents, associations and surroundings of the assumed location.

Drawings required:

A plan at a scale of 16 feet to the inch, and a side elevation at a scale of 8 feet to the inch, both on one sheet, and a sheet of details at a scale of one-half inch to the foot. The size of each sheet shall be exactly 20 inches by 30 inches. The sheets are not to be mounted. All drawings are to be in black ink, without wash or color, except that the walls on the plan are to be blacked in.

The exterior of the building is to be designed entirely in terra-cotta, and the same material may be used at will in the interior. Colored terra-cotta, or faience, may be employed.

It must be borne in mind that one of the chief objects of this competition is to encourage the study of the use of architectural terra-cotta. There is no limitation of cost, but the designs must be suitable for the location, for the character of the building, and for the material in which it is to be executed. The details should indicate in a general manner the jointing of the terra-cotta and the sizes of the blocks.

In awarding the prizes, the intelligence shown in the constructive use of terra-cotta and the development or modification of style, by reason of the material, will be taken largely into consideration.

Every set of drawings is to be signed by a nom de plume or device, and accompanying same is to be a sealed envelope with the nom de plume on the exterior and containing the true name and address of the contestant.

The drawings are to be delivered flat at the office of THE BRICKBUILDER, 85 Water Street, Boston, Mass., charges prepaid, on or before December 15, 1904.

The prize drawings are to become the property of THE BRICKBUILDER, and the right is reserved to publish or exhibit any or all of the others. Those who wish their drawings returned may have them by enclosing in the sealed envelopes containing their names ten cents in stamps.

The designs will be judged by three well-known members of the architectural profession.

For the design placed first in this competition there will be given a prize of $500.

For the design placed second a prize of $200.

For the design placed third a prize of $100.

We are enabled to offer prizes of the above-mentioned amounts largely through the liberality of the terra-cotta manufacturers who are represented in the advertising columns of THE BRICKBUILDER.

This competition is open to every one.

REAR ELEVATIO

FRONT ELEVA

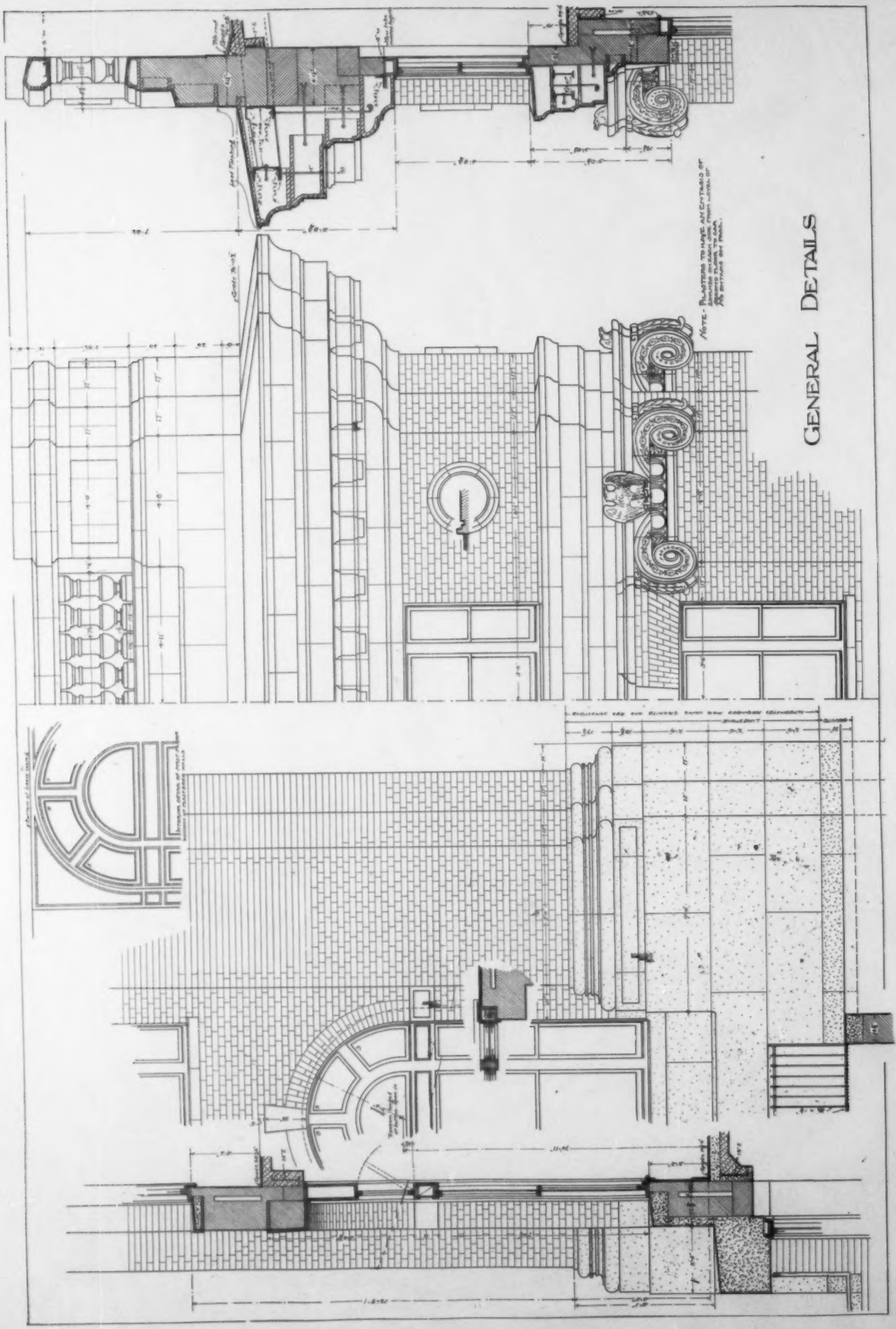
HOUSE AT SEWICKLEY HEIGHTS.

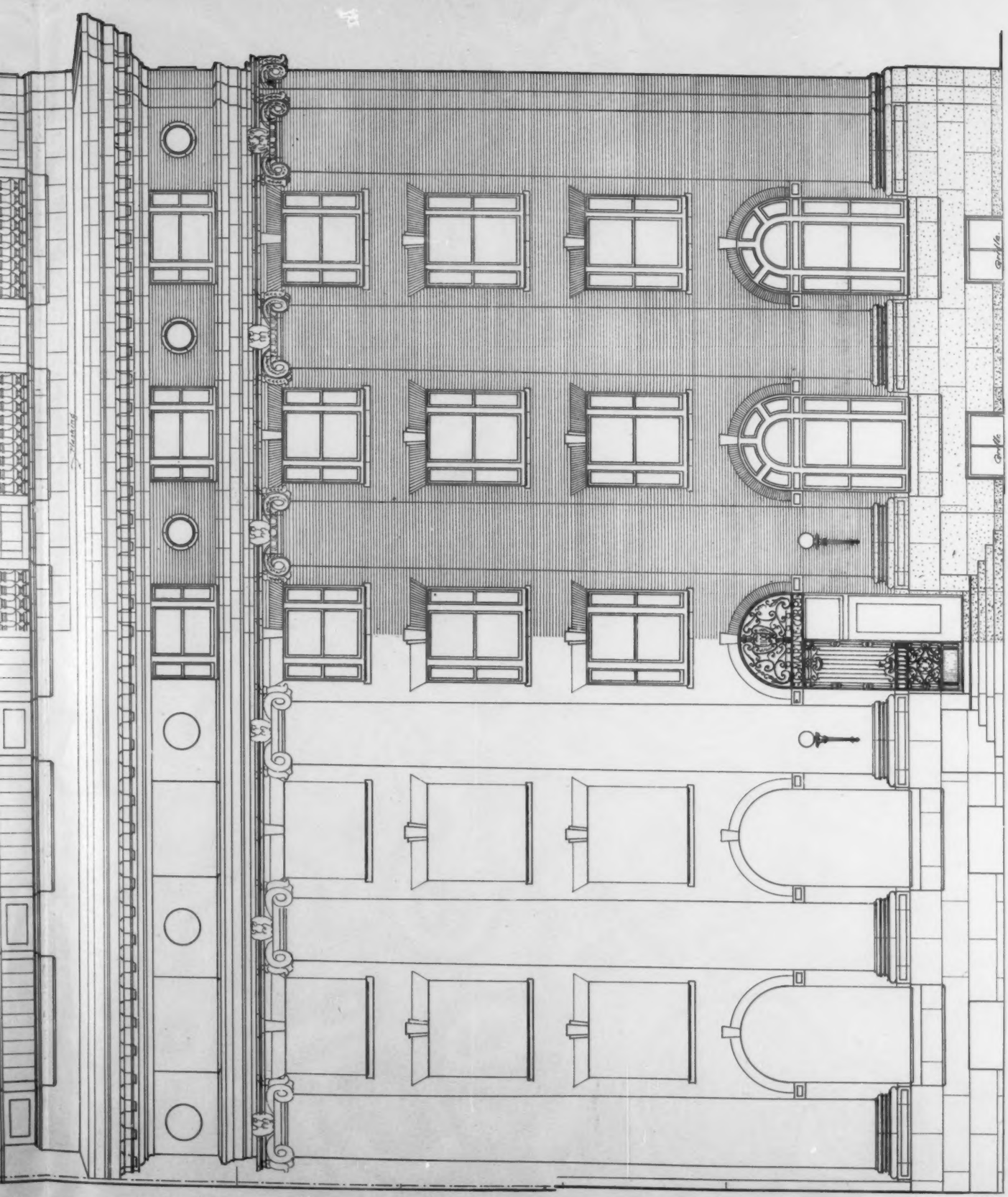
AR ELEVATION.

FRONT ELEVATION.

EIGHTS, PA. RUTAN & RUSSELL, ARCHITECTS.

UNIV. OF MICH.


GENERAL DETAILS

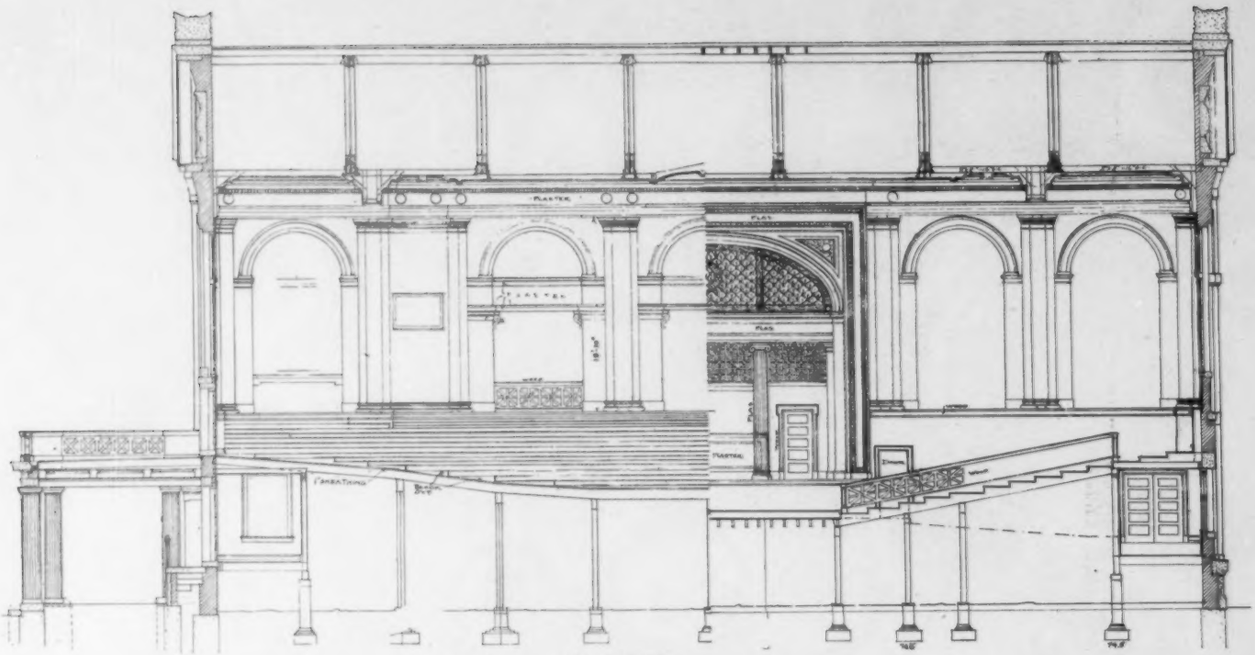


FRONT ELEVATION.

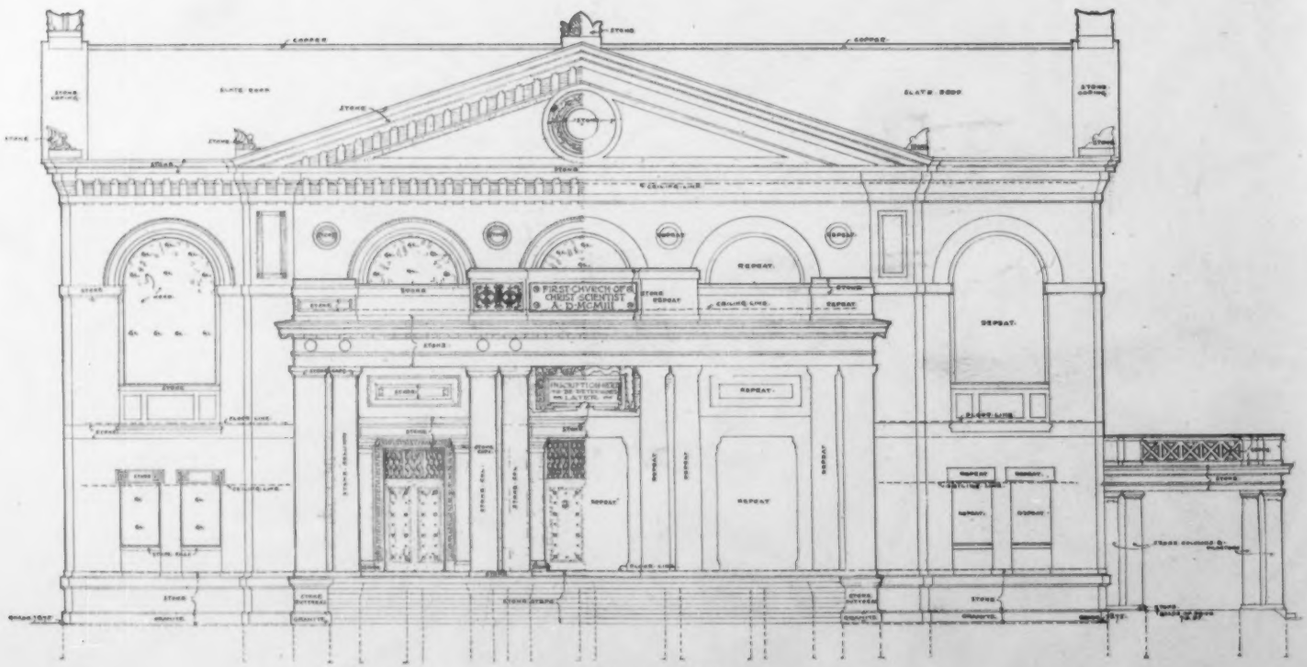
BUILDING FOR UNITED STATES QUARTERMASTER'S DEPOT, PHILADELPHIA, PA.

RANKIN, KELLOGG & CRANE, ARCHITECTS.

UNIV. OF MICH.



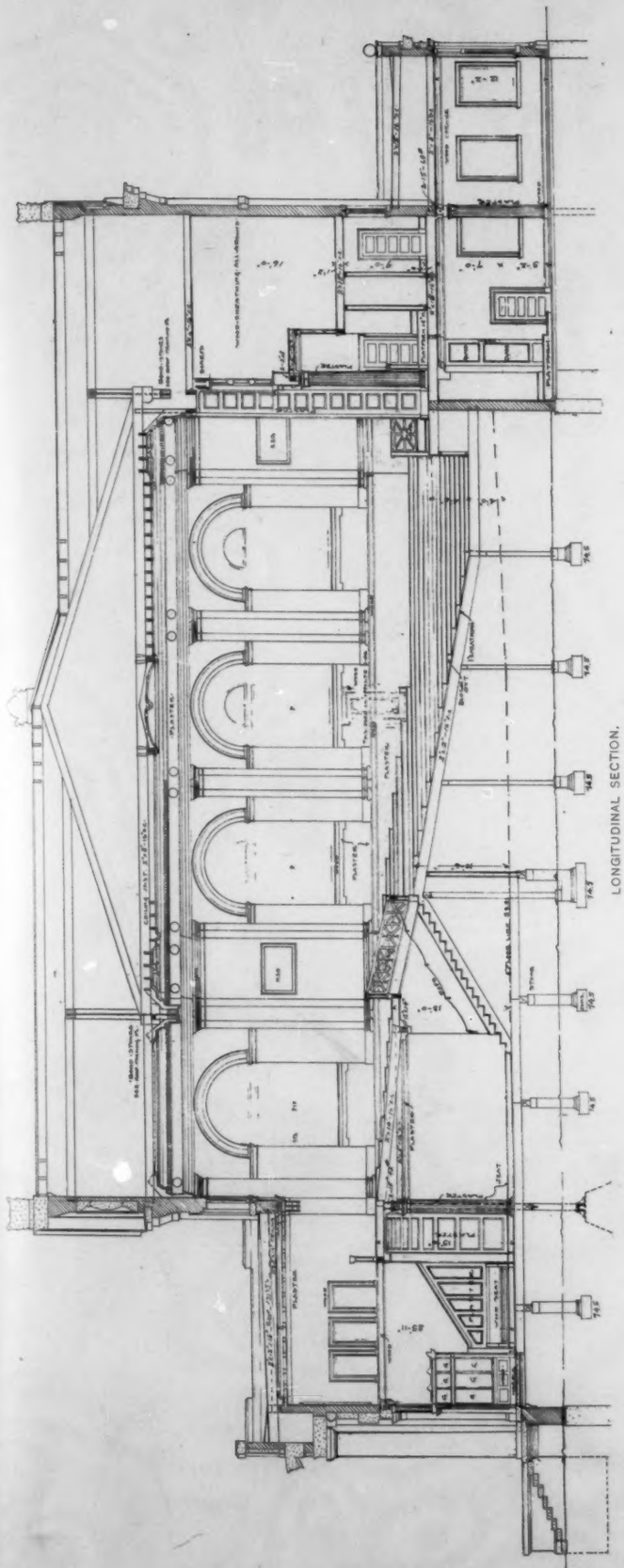
CROSS SECTION.



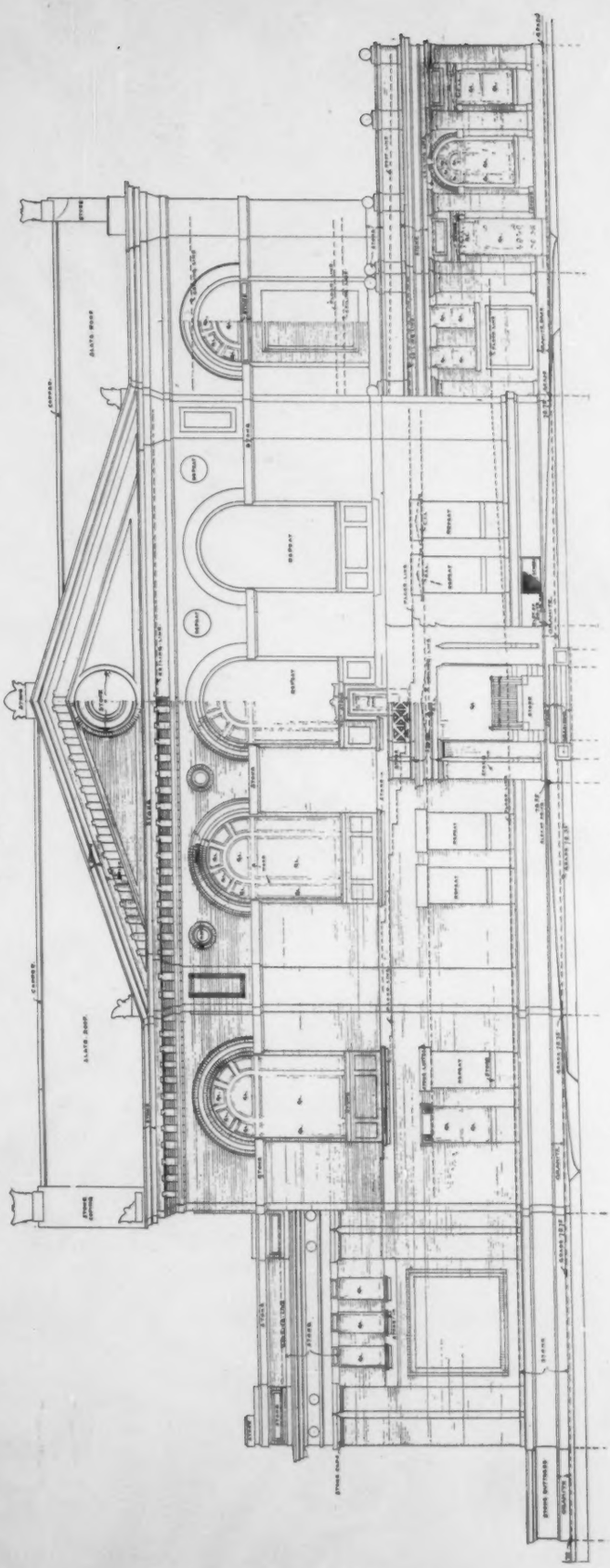
FRONT ELEVATION.

FIRST CHURCH OF CHRIST, SCIENTIST, ST. LOUIS, MO.

MAURAN, RUSSELL & GARDEN, ARCHITECTS.



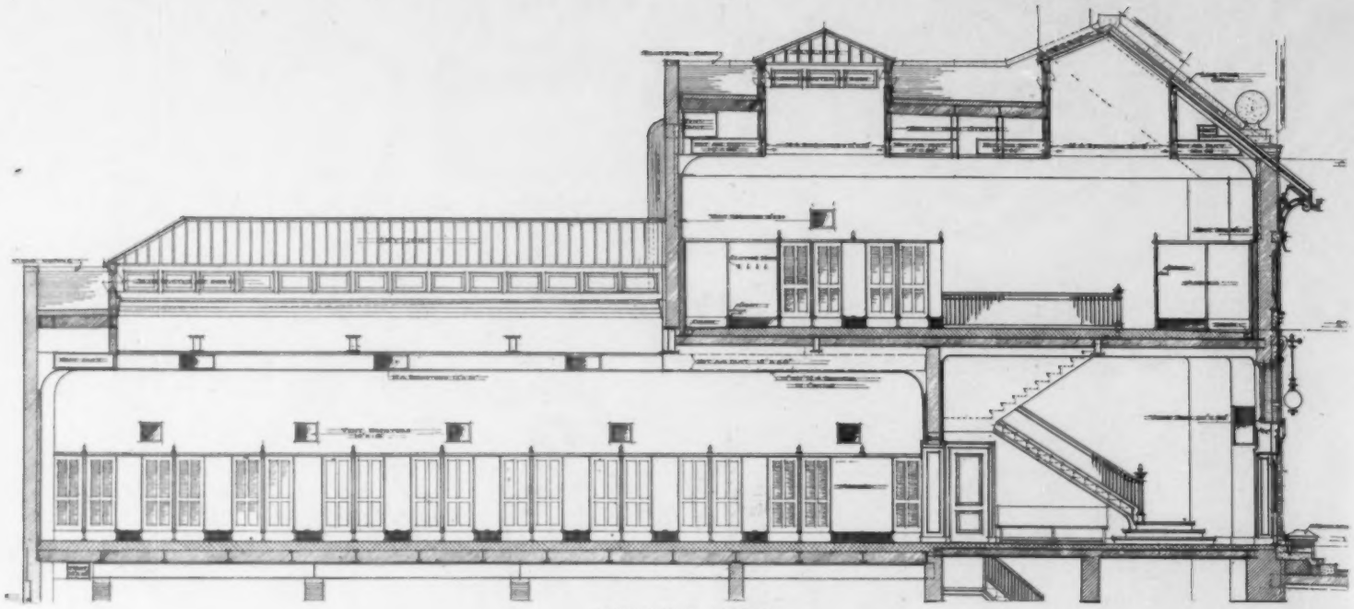
LONGITUDINAL SECTION.



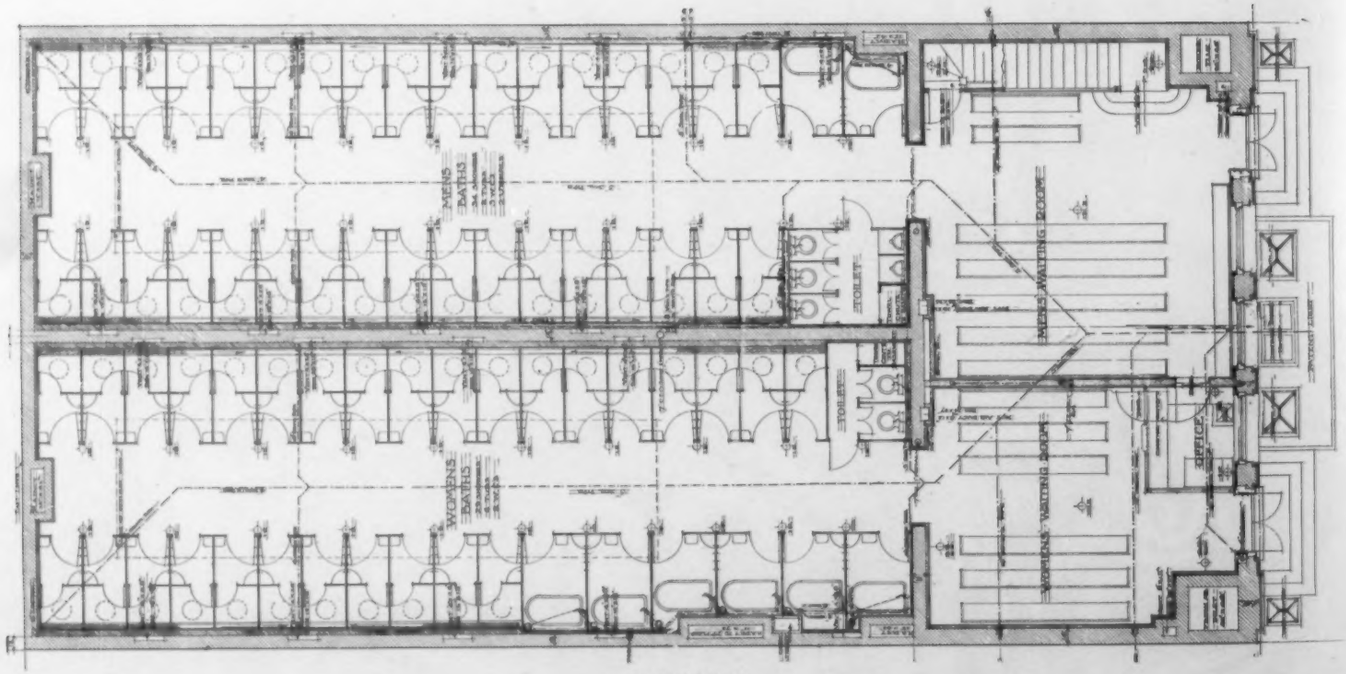
SIDE ELEVATION.

FIRST CHURCH OF CHRIST, SCIENTIST, ST. LOUIS, MO.

MAURAN, RUSSELL & GARDEN, ARCHITECTS.



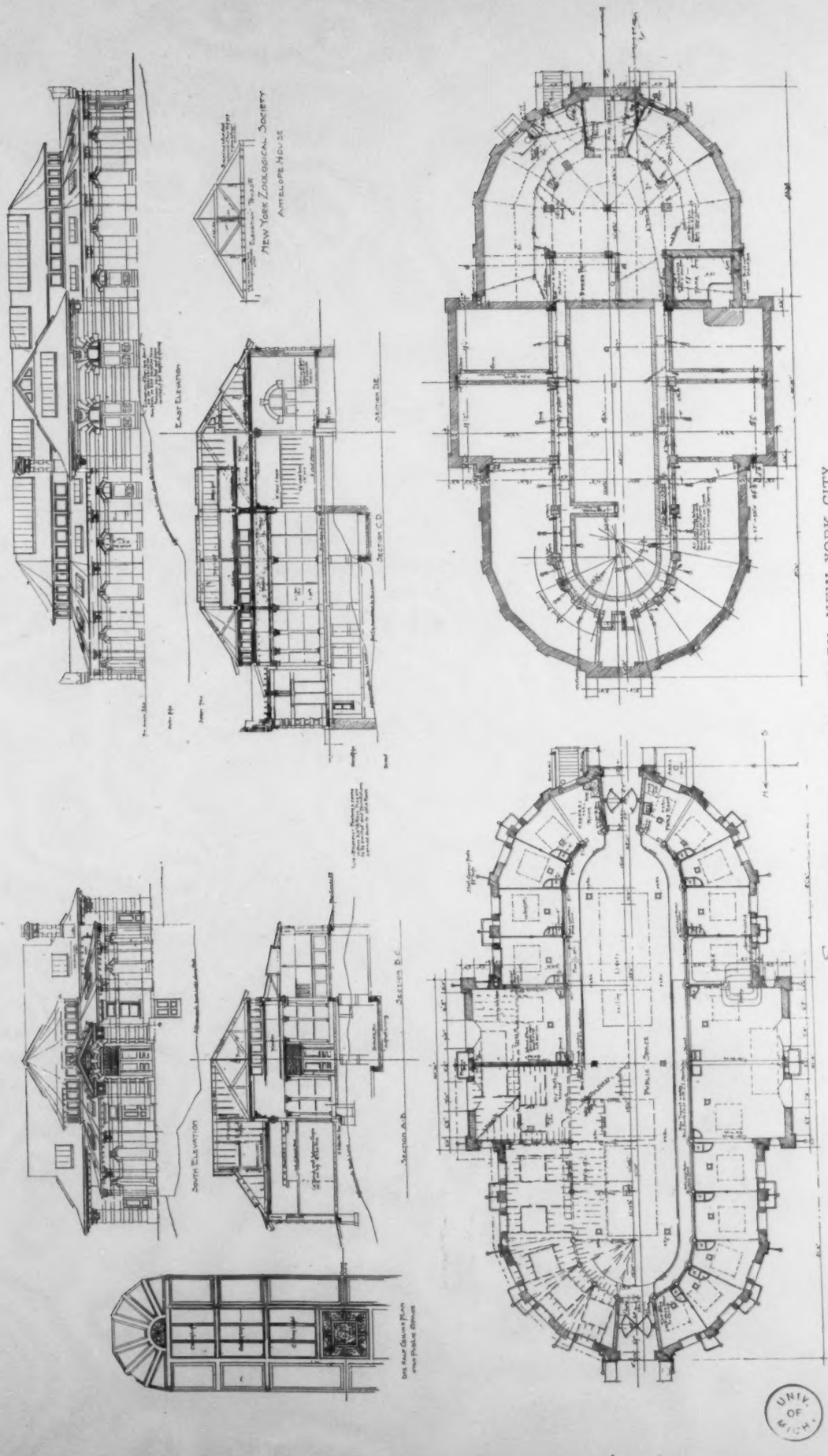
LONGITUDINAL SECTION.



FIRST FLOOR PLAN.

FREE PUBLIC BATHS, 41ST STREET, NEW YORK CITY.

YORK & SAWYER, ARCHITECTS.



ANTELOPE HOUSE, BRONX PARK, NEW YORK CITY.
HEINS & LA FARGE, ARCHITECTS.

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FREE PUBLIC BATHS, 41ST STREET, NEW YORK CITY.
YORK & SAWYER, ARCHITECTS.

FREE PUBLIC BATHS, 109TH STREET, NEW YORK CITY.
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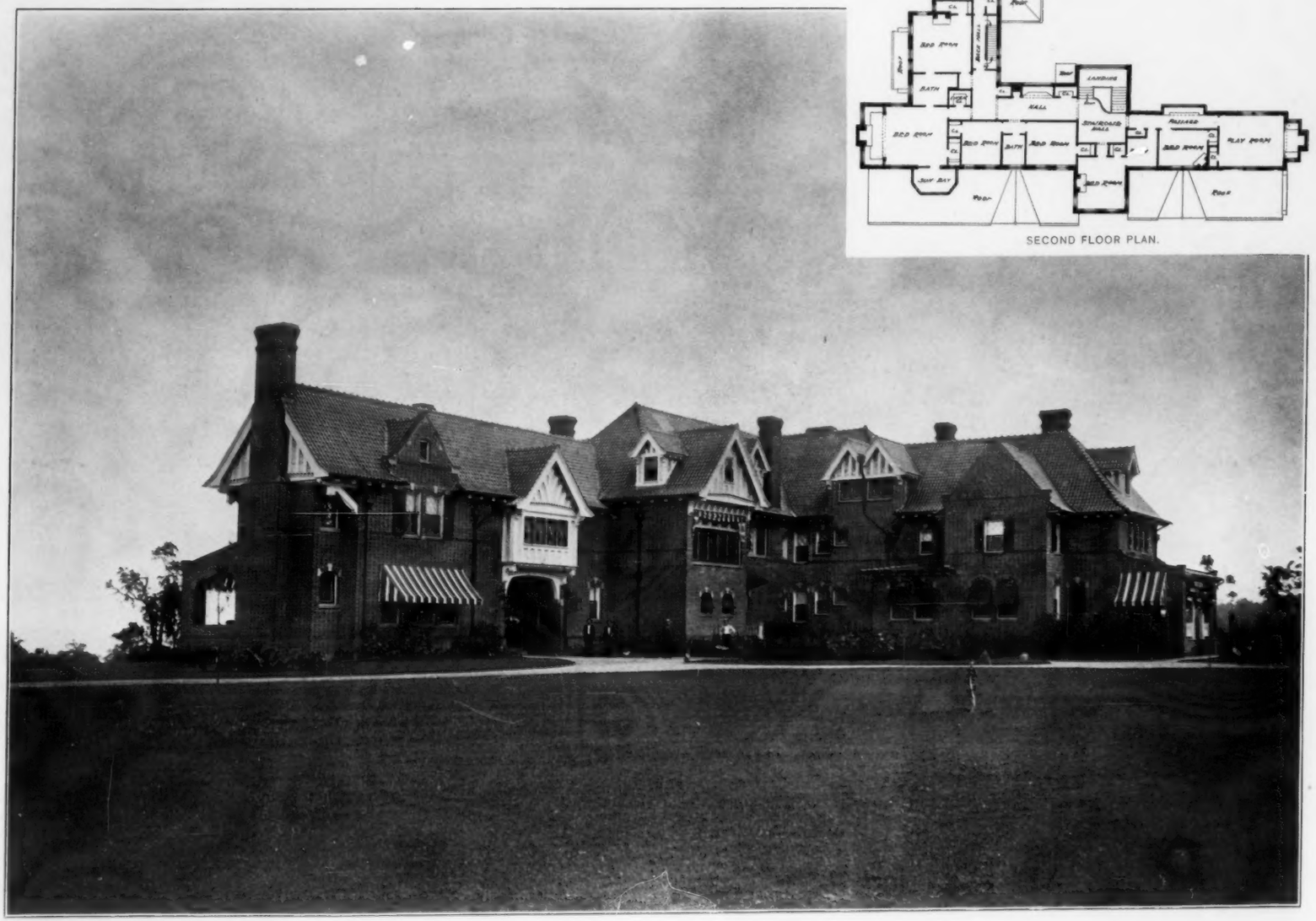

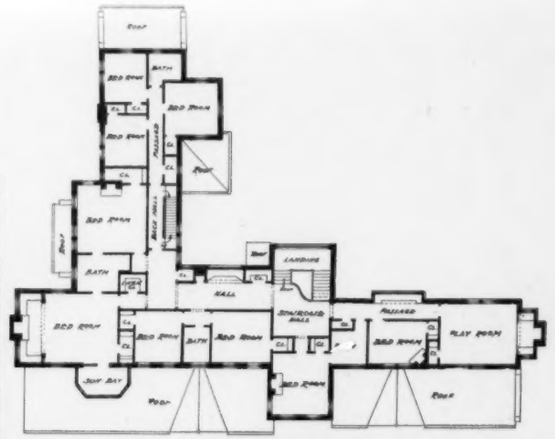

SECOND FLOOR PLAN.

HOUSE AT SEWICKLEY HEIGHTS, PA.

RUTAN & RUSSELL, ARCHITECTS.

70 c

BUILDING FOR ETHICAL CULTURE SOCIETY, 63RD STREET AND CENTRAL PARK, WEST, NEW YORK CITY.
CARRÈRE & HASTINGS, ARCHITECTS.

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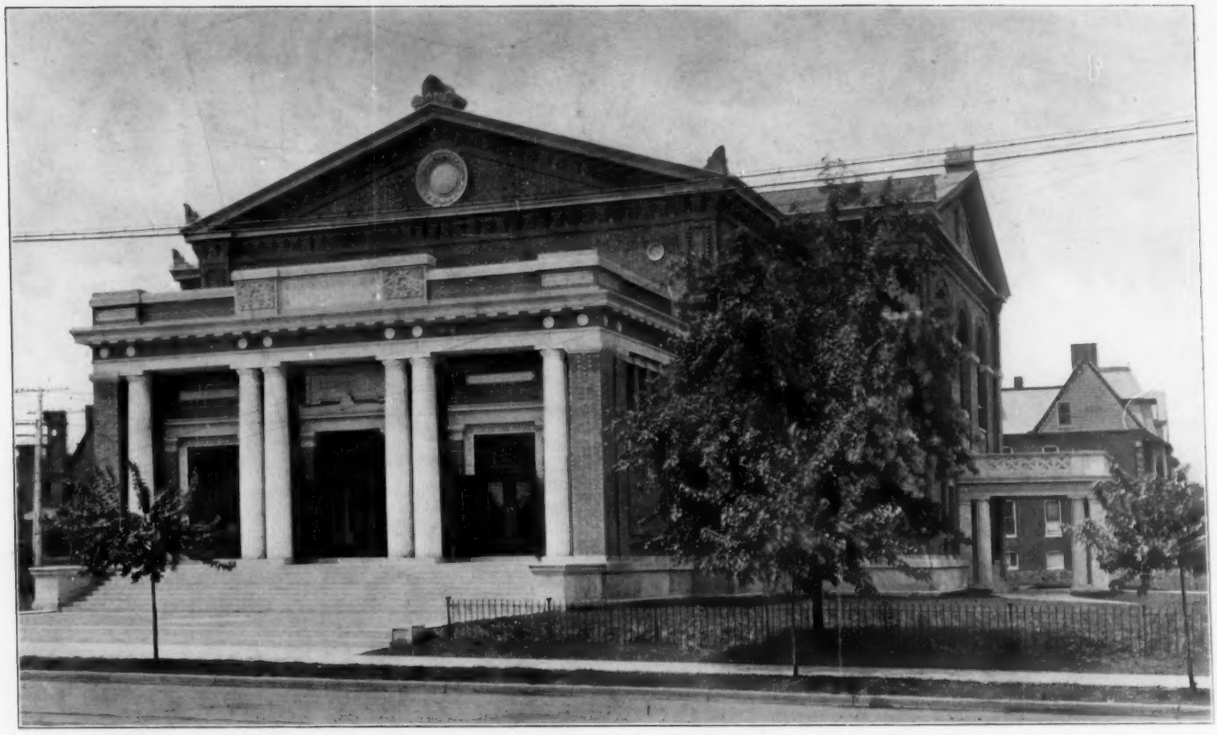

FIRST CHURCH OF CHRIST, SCIENTIST, ST. LOUIS, MO.

MAURAN, RUSSELL & GARDEN, ARCHITECTS.

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FIRST FLOOR PLAN.

HOUSE AT SEWICKLEY HEIGHTS, PA.

RUTAN & RUSSELL ARCHITECTS.

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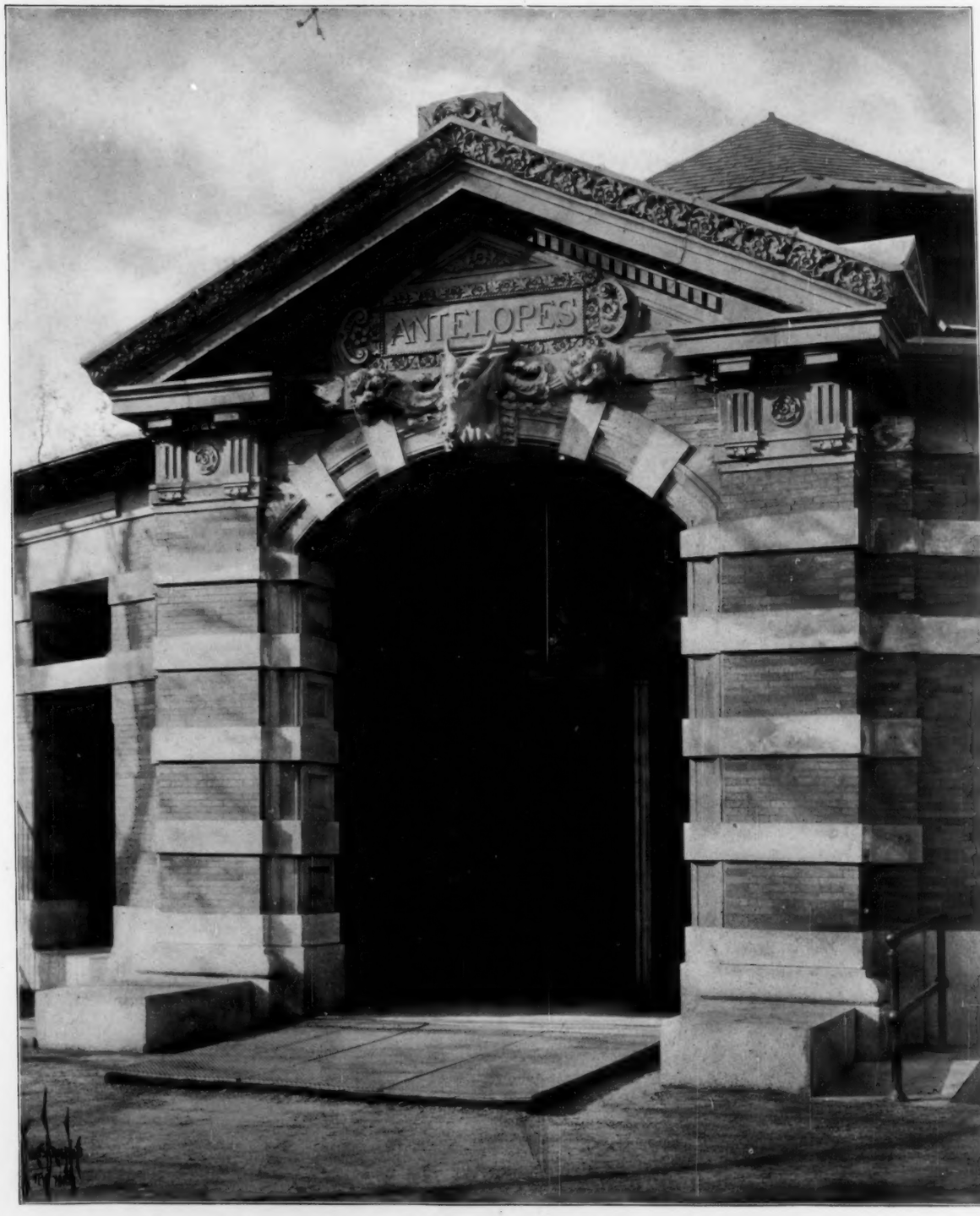

MAIN ENTRANCE TO ANTELOPE HOUSE, BRONX PARK, NEW YORK CITY.
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